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Bureau of Design and Environment Manual

Illinois Department of Transportation
Division of Highways

UNIVERSITY OF ILLINOIS-URBANA
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PREFACE

The *Bureau of Design and Environment Manual* has been prepared to provide uniform practices for the Department and consultant personnel preparing Phase I studies and reports and contract plans for Department projects. The *Manual* presents most of the information normally required in the development of a typical roadway project. The designer should attempt to meet all criteria and practices presented in the *Manual*; however, the *Manual* should not be considered a standard that must be met regardless of impacts. The designer should develop roadway designs that meet the Department's operational and safety requirements while preserving the aesthetic, historic, or cultural resources of an area. Designers must exercise good judgment on individual projects and, frequently, they must be innovative in their approach to roadway design. This may require, for example, additional research into the highway literature.

The *Bureau of Design and Environment Manual* was developed by the Policy and Procedures Section within the Bureau of Design and Environment with assistance from the engineering consulting firm of Roy Jorgensen Associates, Inc.

Illinois Department of Transportation
Departmental Policies

D&E-1
March 1, 2001

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

1. POLICY.

The Bureau of Design and Environment shall publish and maintain a manual which establishes uniform policies and procedures for the location, design, and environmental evaluation of highway construction and reconstruction type projects on the State Highway System. The title of the Manual will be the *Bureau of Design and Environment Manual* (BDE Manual).

2. PURPOSE.

The purpose of this Policy is to compile the policies and procedures which govern project location, design, and environmental evaluation into one comprehensive manual.

3. GUIDELINES FOR IMPLEMENTATION.

The policies and procedures contained in the *BDE Manual* are effective on the date they are transmitted to Manual holders unless otherwise noted in the transmittal memorandum. The *BDE Manual* is intended to apply primarily to the State Highway System. The *BDE Manual* provides detailed requirements on such subjects as:

a. Administration and Procedures
b. Project Development
c. Environmental Procedures
d. Roadway Design Elements
e. Design of Highway Types
f. Other Highway Design Elements
g Plans and Contracts
h. Procedure Memoranda

March 1, 2001 D&E-1

4. **RESPONSIBILITIES.**

The Bureau of Design and Environment is responsible for preparing and maintaining this Policy and the associated BDE Manual. All projects on the State Highway System developed by the District Offices or other agencies shall be in compliance with this Policy and the *BDE Manual*.

5. **ACCESSIBILITY.**

Copies of this Policy may be obtained from the Bureau of Design and Environment in the Harry R. Hanley Building. This Policy and the associated BDE Manual may be examined in the Hanley Building Library and in each of the nine District Highway Offices. The *BDE Manual* is available on CD and may be obtained from the Bureau of Highways Administration in the Hanley Building.

CLOSING NOTICE.

Supersedes: Departmental Policy LEN-1, Policy on the *Bureau of Location and Environment Manual*; and Departmental Policy DES-1, *Design Manual*.

Approved:

James P. Shiffer
Director of Highways

March 23, 2001
Date

MANUAL FORMAT/UPDATE

The *Bureau of Design and Environment Manual* is intended to provide current design and environment policies and procedures for use in developing State highway projects. To ensure that the *Manual* remains up to date and appropriately reflects changes in IDOT's needs and applicable requirements, its contents will be updated on an ongoing basis.

BDE will be responsible for evaluating changes in the highway design and environmental literature (e.g., the issuance of new research publications, revisions to Federal regulations) and will ensure that those changes are appropriately addressed through the issuance of revisions to the manual. In addition, it is important that users of the *Manual* inform BDE of any inconsistencies, errors, need for clarification, or new ideas to support the goal of providing the best and most up-to-date information practical. We have provided a form entitled BDE Manual Comments and/or Corrections (see page vii) for use in submitting any comments and/or suggestions.

CD-ROM has been selected as the primary format for distribution of the *Manual*. At regular intervals, a new edition of the entire manual will be issued via an updated CD-ROM. The upper right-hand corner of each page will indicate the latest issuance date for that page. As changes in policies, procedures, directives, and/or criteria occur between the issuance dates for new editions of the *Manual*, these changes will be distributed via BDE Procedure Memoranda. The user should retain and refer to these interim memoranda when using the *Manual* until such time as they are superseded or incorporated into an updated edition of the *Manual*. BDE Information Memoranda will be used to distribute items of information that are of interest and are related to topics covered in the *Manual* but that are not a part of the framework of IDOT policies and procedures for project development.

This 2002 Edition of the *Bureau of Design and Environment Manual*, dated December 2002, replaces the 2000 Edition of the *Manual*, dated November 1999. This edition contains numerous minor changes and corrections and has been revised throughout to incorporate both US Customary and metric measurements. Revisions were made in accordance with the 2001 AASHTO *A Policy on Geometric Design of Highways and Streets* (Green Book). It also incorporates a number of other noteworthy revisions as reflected in the list below. Changes for the switch to dual units are not specifically marked. Vertical lines in the page margins denote all other revisions.

Chapter 5 – Raised the District Engineer's signature authority from $50K to $250K (5-1.02) and provided examples of Local Agency Agreements (5-8).

Chapter 8 – Revised to reflect current methods of compensation (direct labor multiple) (8-3.03(a)) and clarified Damage due to Consultant Errors and/or Omissions (8-5.01).

Chapter 12 – IDOT operates under a Project Oversight Agreement not Certification Acceptance procedures (12-5). SMART Policy Guidelines revised.

Chapter 13 – Discussion regarding the use of crossovers added. Updated to reflect requirement of the District to coordinate with the Office of Public Affairs for all major construction/reconstruction projects, and also notify the Office of Public Affairs one week prior to any detours or road closures.

Chapter 14 – Data required for Intersection Design Studies and the plan sheet format revised.

Chapter 22 – Metric use policy updated (22-2.02), validity of IDNR sign-off clarified (22-5.05(c)), BDE PM 19-00 incorporated (22-4).

Chapter 23 – BDE PM 22-01 incorporated (23-1.05(d), 23-2.02(d), and 23-4.02), reference to incidental taking authorization added (23-2.02(h)), guidance on groundwater resources/quality revised (23-2.02(i)).

Chapter 24 – BDE authority to sign cover sheet clarified (24-3.03), BDE PM 21-01 incorporated (24-3.05), BDE PM 22-01 incorporated (24-3.06), reference to incidental taking authorization added (24-3.07(h)), guidance on groundwater resources/quality revised (24-3.07(i)).

Chapter 25 – BDE authority to sign cover sheet clarified (25-3.04), BDE PM 21-01 incorporated (25-3.07(d)), BDE PM 22-01 incorporated (25-3.08), reference to incidental taking authorization added (25-3.09(h)), guidance on groundwater resources/quality revised (25-3.09(i)).

Chapter 26 – Approval dates for Programmatic 4(f)s clarified (26-2.06), BDE PM 18-00 incorporated (26-6), applicability of IDNR pre-screening clarified (26-9.06(b)), Federal "farmland" definition updated (26-10.04(a)).

Chapter 27 – Access to ESR forms clarified (27-1.03, 27-2.01), timing of PSI reports clarified (27-2.03(a)).

Chapter 28 – BDE PM 25-01 incorporated (28-2, 39-3.03(c), 59-8.02).

Chapter 31 – BDE PM 7-00 incorporated (31-7). Revised to reflect changes made with the 2001 AASHTO *Green Book*, in particular the height of eye and object for stopping sight distance.

Chapter 32 – Updated to reflect the changes made with the 2001 AASHTO *Green Book*. Superelevation development for multilane highways modified.

Chapter 33 – Updated to reflect the changes made with the 2001 AASHTO *Green Book*.

Chapter 34 – Rumble strip policy updated to reflect changes made with the new standard.

Chapter 36 – Updated to reflect the changes made with the 2001 AASHTO *Green Book*.

Chapter 37 – BDE PM 20-00 incorporated (37-1.03). Additional requirements by the current FHWA Administrator incorporated.

Chapter 38 – Updated to comply with NCHRP 350 and with the 2002 AASHTO *Roadside Design Guide*.

Chapter 39 – BDE PM 25-01 incorporated (39-3.03). Vertical clearance for new construction bridges on Interstates increased to 16 ft 9 in. Clarification provided regarding definition of reconstruction of structures.

Chapter 40 – BDE PM 13-00 incorporated (40-3.07).

Chapter 44 – Increased vertical clearance required for new construction of Interstates to 16 ft 9 in.

Chapter 49 – Revised criteria for improved bridges on unmarked routes on the State Highway System.

Chapter 53 – Revised to reflect changes in policy on resurfacing and addition of Superpave design guidelines. BDE PM 11-00 incorporated (53-4.05(a) and 53-4.08(c)). BDE PM 12-00 incorporated (53-4.08(e)). BDE PM 29-02 incorporated (53-4.05(a), (b), (c) & (d)).

Chapter 54 – BDE PM 10-00 incorporated (54-2.01(f)). BDE PM 11-00 incorporated (54-5.01(c) and 54-5.01(h)(7)(g)). Revised minimum design traffic criteria for freeway ramps (Figure 54-1B), rest areas (54-1.07), and weigh stations (54-1.08).

Chapter 56 – The Electrical and Mechanical Unit in the Bureau of Design and Environment, will review all District electrical/light designs, including those prepared by a consultant. District 1 is the exception. All lighting projects submitted for review will consider both luminance and illuminance design.

Chapter 58 – BDE PM 3-00 and Markers (5-125) from the original *Design Manual* were combined into a new Section 58-8, Survey Markers and Monuments and BDE PM 4-00 added for a new Section 58-7 Sealing of Abandoned Water Wells.

Chapter 59 – BDE PM 14-00 added for a new section 59-7.15. BDE PM 25-01 incorporated (59-8.02 and 59-8.04). Design guidelines added throughout.

Chapter 64 – BDE PM 24-02 incorporated (64-2.04(a)).

Illinois Department of Transportation

BDE Manual
Comments and/or Corrections

Name:_____ Date:_____

IDOT Office/Company Name:_____

Position:_____

Telephone Number: _____ E-Mail Address:_____

(PLEASE PROVIDE ANY BACKGROUND OR REFERENCES USED)

Send to:
Illinois Department of Transportation
2300 South Dirksen Parkway – Room 330
Springfield, Illinois 62764
Attn: Bureau of Design & Environment
Policy & Procedures Section

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ORGANIZATION AND FUNCTIONS
(Program Development)

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

Chapter One
ORGANIZATION AND FUNCTIONS
(Program Development)

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CHAPTER ONE

ORGANIZATION AND FUNCTIONS
(Program Development)

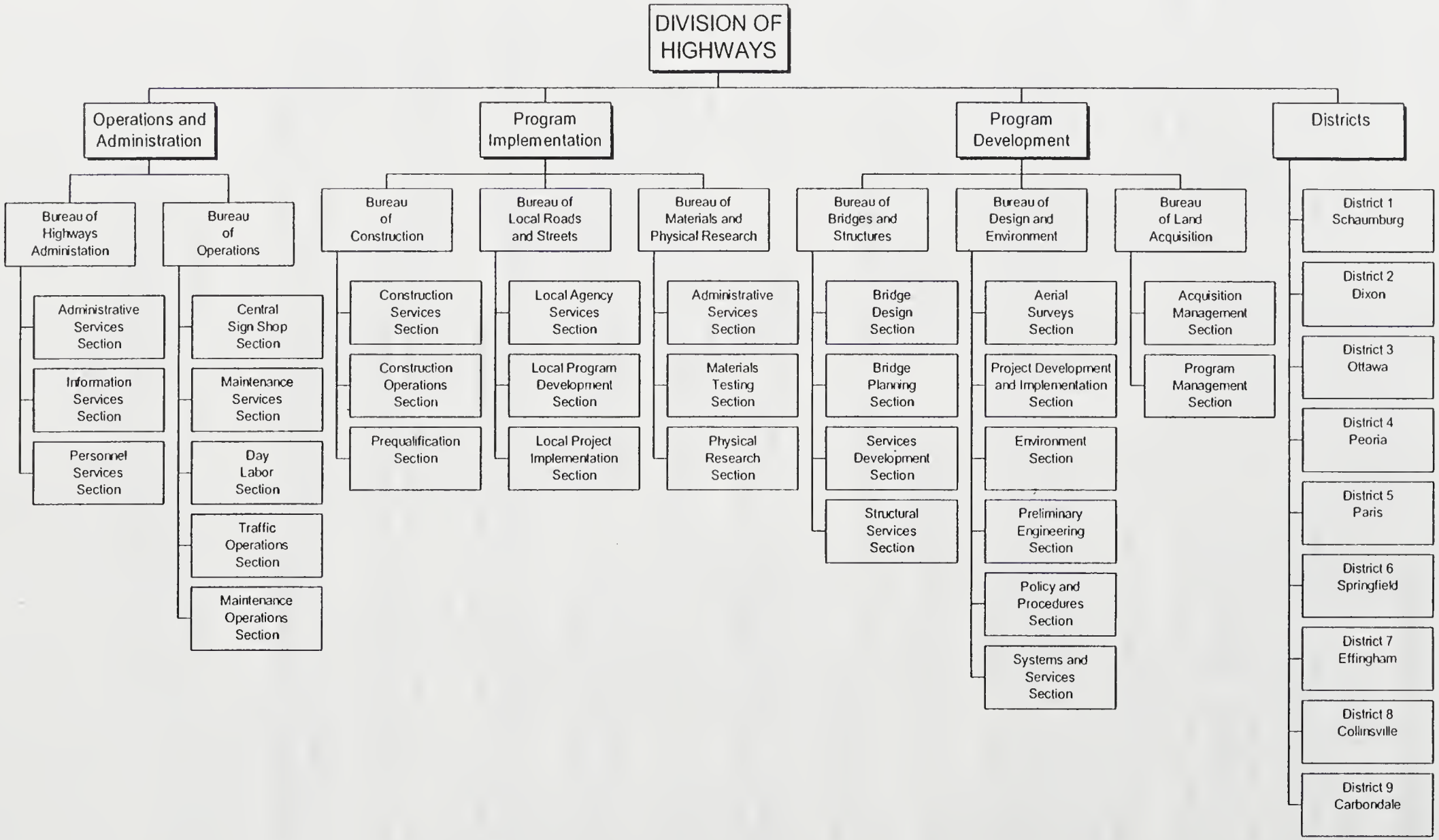
Chapter 1 discusses the organization and functions of units within Program Development in the Division of Highways within the Illinois Department of Transportation. The chapter briefly discusses:

- each section within the Bureau of Bridges and Structures,
- each section within the Bureau of Land Acquisition, and
- each functional unit within each section of the Bureau of Design and Environment.

This Chapter is intended to provide the user with a general direction for which unit within Program Development can provide additional information for specific needs not covered in the *Manual*. The *IDOT Organization and Functions Manual* presents a brief discussion on the many other functional units within the Illinois DOT.

1-1 ORGANIZATIONAL CHART

Figure 1-1A presents the organization of the Illinois Department of Transportation.



DIVISION OF HIGHWAYS
Figure 1-2A

1-3 PROGRAM DEVELOPMENT

Program Development within the Division of Highways includes the central Bureaus of Bridges and Structures, Design and Environment, and Land Acquisition. These bureaus ensure that the development of central programs and activities will support an efficient highway program implementation in the districts. The overall objective is to ensure that highway improvement projects are advanced to the letting stage in a cost-effective and timely manner.

Section 1-3 discusses the functional responsibilities of the Bureau of Bridges and Structures and the Bureau of Land Acquisition. These bureaus have prepared manuals to provide detailed information on their responsibilities and the Department policies they administer. See Chapter 60 for a brief description of these manuals. Section 1-4 discusses the functions of the Bureau of Design and Environment.

1-3.01 Bureau of Bridges and Structures

The Bureau of Bridges and Structures is responsible for developing the structural design policies, practices, and criteria for the Department. The Bureau:

- provides the detailed planning and design of highway structures,
- develops bridge standards,
- performs preliminary engineering for structural elements,
- prepares highway structure plans,
- conducts special bridge and structure studies,
- inspects structural steel,
- reviews consultant structure plans for structural adequacy, and
- provides review and guidance for local agency project development.

1-3.01(a) Bridge Design Section

The Bridge Design Section is the Department's focal point for the preparation of all in-house structural details. The Section has the day-to-day responsibility to develop structural plans from the general plan and elevation to PS&E advertisement. The specific functional responsibilities of the Bridge Section are to:

- prepare in-house structural designs for all types of highway bridges (i.e., longer than 20 ft (6 m)), including:
  - + the determination of applicable loads to the bridge;
  - + the design of reinforced concrete superstructures;

  + the design of prestressed concrete superstructures;
  + the design of structural steel superstructures;
  + verifying geometric criteria for the structure (e.g., bridge widths, vertical clearances);
  + the design of substructure units and foundations;
  + the design of bridge accessories (bridge rails, sidewalks, curbs, fencing, etc.);
  + the rehabilitation of existing bridges (e.g., bridge deck rehabilitation, seismic retrofit); and
  + coordination with other Department preconstruction functions (environment, right-of-way, roadway design) as necessary for project development;

- prepare in-house designs for other structures including box culverts, retaining walls, sound barriers, etc.; and
- prepare all necessary PS&E elements for structural items, including construction plans, special provisions, quantities, and engineering cost estimates.

In addition to its responsibilities for in-house designs, the Bridge Design Section performs a variety of other services. These include:

- in coordination with the Consultant Unit, reviewing structural plan details prepared by consultants;
- reviewing computer programs for structural applications and evaluating new programs for potential Department applications;
- developing design procedures and structural theories;
- remaining abreast of the state-of-the-technology in bridge design and materials through review of AASHTO, TRB, FHWA, etc., publications;
- investigating and implementing revisions to the:
  + *IDOT CADD Manual*,
  + *IDOT Bridge Manual*,

  + *IDOT Bridge Standards,*
  + *IDOT Standard Specifications for Road and Bridge Construction* (structural elements),
  + *IDOT Culvert Manual*, and
  + *IDOT Prestressed Concrete Manual.*
- representing the Department in litigation related to structural issues;
- providing technical support for structural designs for projects on non-State facilities which are funded by State and/or Federal dollars;
- serving as a technical resource in structural designs for local government projects; and
- participating as needed in the field construction of structural elements, including:
  + in coordination with the Structural Services Section, reviewing and approving construction shop drawings, erection drawings, and falsework drawings;
  + performing periodic field construction inspections; and
  + reviewing and commenting on construction change orders when requested by the Bureau of Construction.

1-3.01(b) Bridge Planning Section

The responsibilities of the Bridge Planning Section include:

- providing the preliminary engineering functions for bridge design which include:
  + soils analysis (e.g., classification, bearing capacity);
  + substructure and foundation design (e.g., piers, bents, piles, footings, abutments);
  + bridge hydraulics (e.g., hydrological calculations, ice/debris impacts, freeboard, hydraulic calculations); and
  + for existing bridges, determining the most economical method of rehabilitation or replacement;

- developing and preparing type, size, and location plans for bridges and structures to establish the structure type and determine related policies and procedures;
- reviewing Bridge Condition Reports;
- evaluating proposed structural engineering projects and designating design plan preparation as either in-house or by consultants;
- assessing the qualifications of consultant engineers, approving consultant proposals, and monitoring consultant compliance with contract provisions;
- assisting in programming and monitoring the Department's Multiyear Bridge Program;
- conducting special engineering studies and reports;
- preparing and maintaining the Department's *Soils Manual* and *Drainage Manual*; and
- for roadway drainage, serving as a technical resource for in-house roadway design projects.

1-3.01(c) Services Development Section

The functions of the Services Development Section include:

- managing the Bureau's data processing and automation equipment systems;
- coordinating budget contracts;
- providing administrative, personnel, and training services for the Bureau;
- coordinating word processing activities; and
- maintaining and enhancing the automated filing and record retrieval system for project files, personnel files, structural design library, etc.

1-3.01(d) Structural Services Section

The responsibilities of the Structural Services Section include:

- managing the Illinois Bridge Inspection Program to ensure compliance with the National Bridge Inspection Standards (NBIS), including:

  + coordinating the inspection of all bridges open to the public in Illinois;
  + conducting the inspection of all structures over major waterways;
  + providing guidance to Department, local agency, and consultant bridge inspectors;
  + managing and using the collected data;
  + developing and maintaining a written guide for bridge inspectors and providing training;
  + preparing and processing Structure Inventory and Appraisal (SI&A) data for all public bridges in the State; and
  + maintaining an inventory on the structural and functional condition of all public bridges in Illinois;

- providing the Department's structure ratings, structural analyses, permit load approvals and investigations, and load limit designations on all bridges and structures within the State;
- administering and managing the enhancement and coordination of the Illinois Bridge Management Systems (BMS), including:
  + recommending bridge improvements based on the findings from the Illinois Bridge Inspection Program;
  + incorporating cost-effective considerations into project prioritization; and
  + for HBRRP projects, monitoring project implementation;
- conducting the Department's investigation and evaluation of damaged bridge members from fatigue cracking, deterioration, or vehicular crashes and preparing or approving plans for corrective action;
- approving all fabrication shop plans for bridge and traffic structures;
- regulating material usage and utilization of new fabrication and welding processes;
- inspecting the fabrication, welding, and nondestructive testing of weldments for steel bridges and sign structures;

- developing policies and procedures for paint and lead paint containment specifications and guidelines to achieve the effective maintenance of State highway bridges;

- determining the safe load-carrying capacity of all State-maintained structures;

- preparing and maintaining the *Structural Services Manual* and the *Sign Structures Manual*; and

- providing administrative and technical support to local agencies to assist them in the development of bridge construction, rehabilitation, and replacement projects and ensuring that measures are implemented to evaluate the safety of local agency bridges, including:

  + reviewing Bridge Condition Reports, Preliminary Bridge Design, and Hydraulic Reports;

  + inspecting and rating bridges to determine load-carrying capacity;

  + reviewing load-carrying capacity analyses and bridge posting recommendations prepared by consulting engineers;

  + reviewing local agency construction and permit loadings;

  + reviewing and developing bridge repair details;

  + participating in process reviews to ensure compliance with NBIS requirements;

  + providing specific information for NBIS inspection scheduling to minimize NBIS inspection delinquencies;

  + developing policies and procedures to provide local agencies with efficient and effective methods of complying with NBIS inspection and evaluation requirements; and

  + presenting training classes to provide information on basic NBIS inspection procedures, scour evaluation, and bridge repair methods.

1-3.02 Bureau of Land Acquisition

The Bureau of Land Acquisition is responsible for developing policies for the Statewide land acquisition program. This program includes the functions of appraisal, negotiation, acquisition, relocation assistance, property management, right-of-way engineering, and signboard and

junkyard control. The Bureau is responsible for developing and administering standards of review for operational performance and for reviewing all right-of-way expenditures.

1-3.02(a) Acquisition Management Section

The Acquisition Management Section develops and implements Statewide policies and procedures to provide for an effective and systematic Statewide land acquisition program. The section also provides guidance and assistance to district offices, which implement land acquisition activities, in accomplishing right-of-way programs, and it conducts compliance reviews of district land acquisition activities. The land acquisition process includes the following functions:

- appraisal,
- negotiations,
- relocation assistance/property management, and
- acquisition/condemnation.

In addition, the Acquisition Management Section is responsible for:

- reviewing legislation proposed by the General Assembly to determine the impact on land acquisition policies;
- administering the statewide signboard and junkyard control program; and
- monitoring and reporting on land acquisition projects to clear for lettings.

1-3.02(b) Program Management Section

The functions of the Program Management Section include:

- developing policies and procedures for effective project/program management of all land acquisition activities and monitoring related program accomplishments;
- controlling, evaluating data, and developing procedures for the operation of the Land Acquisition System (LAS) and PC-based systems;
- developing policies and procedures on right-of-way engineering and special waste issues;
- administering the asbestos survey contract;
- preparing material and providing assistance in training programs for land surveying;

- reviewing all right-of-way engineering documents in accordance with Department policies, Federal and State laws, and statutory requirements;

- providing programming of Federal-aid projects in accordance with the approved procedures to secure Federal participation;

- preparing project agreements and modified project agreements for the reimbursement of Federal funds;

- preparing vouchers and payment schedules for the purchase of right-of-way and related incidental expenditures;

- developing methods and procedures to maintain records for the accountability of land acquisition expenditures;

- providing administrative support services including budgetary, procurement, and clerical activities; and

- maintaining the central filing system including microfilming of documents for permanent safekeeping.

1-4 BUREAU OF DESIGN AND ENVIRONMENT

The Bureau of Design and Environment (BDE) is responsible for developing standards, specifications, and policies for the State highway system to provide an economical, safe, and comfortable movement of people and goods within the State. BDE develops highway standards and provides support services for district highway design programs; coordinates and prepares Federal-aid program documents; and processes plans and contract documents through the letting and contract award stage. In addition, BDE is responsible for developing policies for the preparation, coordination, final review, and approval of project location studies and environmental documents.

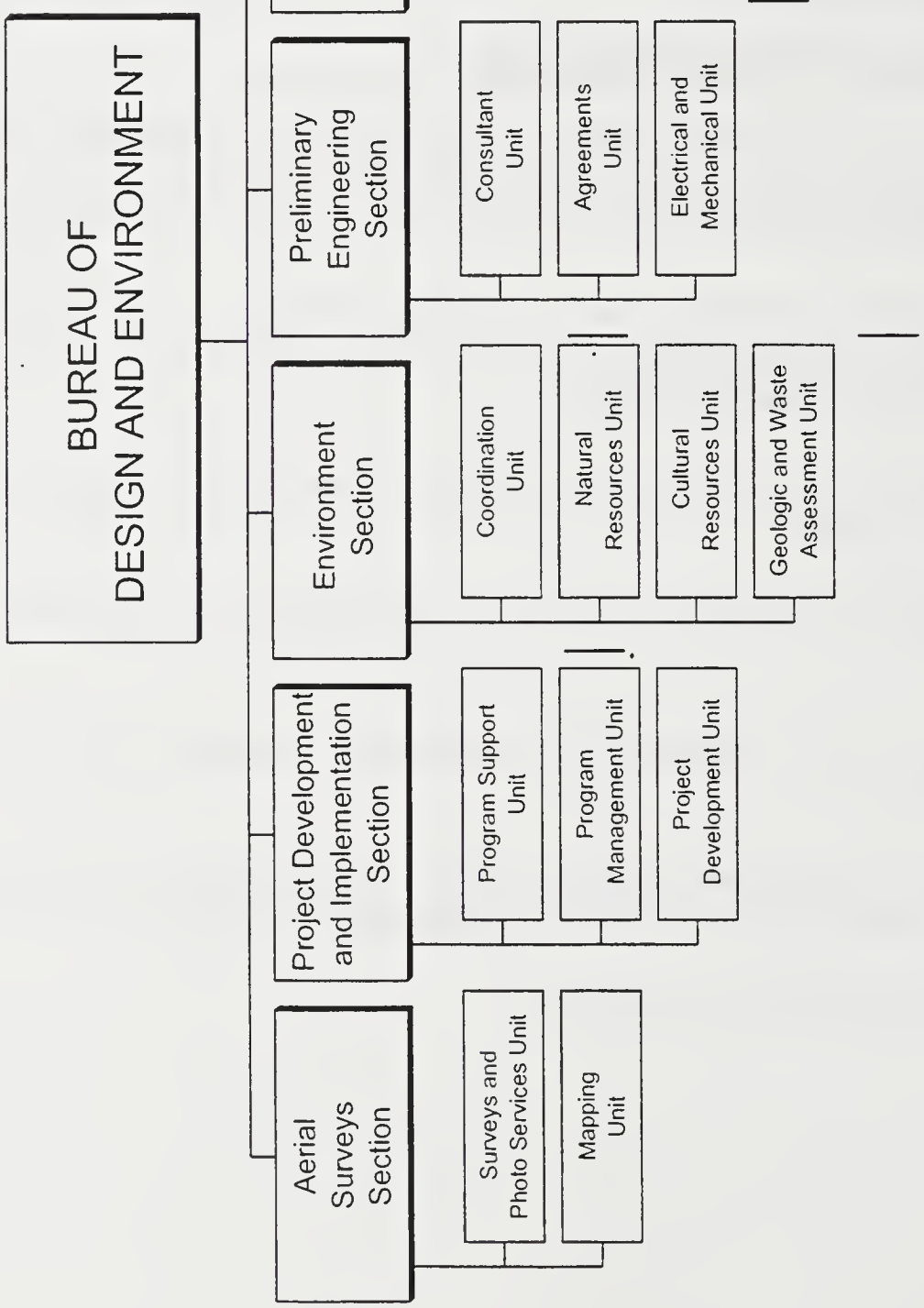
Figure 1-4A presents the organization of the BDE.

1-4.01 Aerial Surveys Section

1-4.01(a) Surveys and Photo Services Unit

The Surveys and Photo Services Unit, in combination with the district field survey crews, is responsible for aerial surveying needs required for the Department's program of projects. The unit's responsibilities include:

- providing aerial photography and photographic services for the Department and other State agencies including scale changes for maps, plans, charts, and photographic plates used for reproduction and printing;
- maintaining survey datums and coordinate systems for a reference or base for all surveys in the State;
- maintaining the necessary records and filing systems for all Aerial Surveys Section projects;
- providing technical assistance on surveying as needed to the districts and local jurisdictions;
- assisting with high-order geodetic surveys and field survey work necessary to provide horizontal and vertical control for photogrammetric mapping; and
- maintaining the *BDE Survey Manual*.



BUREAU OF DESIGN AND ENVIRONMENT
Figure 1-4A

1-4.01(b) Mapping Unit

The Mapping Unit is responsible for the following:

- providing precise topographic maps in digital format for use with a CADD interactive graphic system;
- providing digital imagery in raster format for use with INTERACTIVE Graphic Systems; and
- preparing specifications and agreements for consultant mapping projects and monitoring compliance.

1-4.02 Project Development and Implementation Section

1-4.02(a) Program Support Unit

The Program Support Unit is responsible for the following:

- determining project letting dates;
- clearing projects for advertising and awarding;
- processing CA/Project Status forms;
- determining the proper FHWA funding type and assigning project numbers;
- authorizing project funding;
- obtaining authorization from FHWA for all Federally funded projects including the advertisement of projects, conduct of lettings, and execution of contracts;
- monitoring the availability of funds within State and Federal funding categories;
- obtaining clearinghouse approvals from the Bureau of the Budget in the Governor's Office for all projects under the State's jurisdiction; and
- ensuring that plans are prepared in accordance with agreements with local agencies or other State agencies.

1-4.02(b) Project Management Unit

The Project Management Unit is responsible for the following:

- determining the official engineer's estimate for all projects offered for letting by the Division of Highways;
- analyzing bids received on lettings and presenting disposition recommendations to the awards committee;
- maintaining data on price trends;
- preparing the average unit prices used for cost estimates;
- reviewing and processing plans, proposals, and legal contract documents through the letting stage;
- preparing the Transportation Bulletin to advertise contracts for letting;
- determining pay item numbers; and
- issuing plans and proposals, maintaining listing of bidders, opening and reading bids, and processing bids for the award and execution of contracts.

1-4.02(c) Project Development Unit

The Project Development Unit is responsible for the following:

- monitoring, evaluating, and approving project studies prepared by district offices and by other transportation modes to ensure uniformity of policy compliance and to assist on special location problems;
- preparing location studies for certain complex, critical, or environmentally sensitive projects;
- attending district coordination meetings to discuss engineering issues and the status of projects;
- developing and implementing project studies using an interdisciplinary approach to resolve engineering and location problems;
- reviewing and checking project plans prepared by district offices and consultants for accuracy, completeness, and engineering validity; and

- reviewing special provisions.

1-4.03 Environment Section

The Environment Section provides guidance to districts, the Bureau of Local Roads and Streets and, at the direction of the Secretary or the Director of Highways, to other Department divisions and offices and State agencies on the National Environmental Policy Act process; statutes, rules, and regulations applicable to specific projects; report preparation; and coordination with other State and Federal agencies. The districts serve as the primary coordinator for project studies, and the Environment Section conducts environmental surveys, provides special technical expertise, reviews environmental documents (prepared in whole or in part by the districts), prepares portions of environmental documents as needed and, where necessary, approves environmental documents for the Department.

1-4.03(a) Coordination Unit

The Coordination Unit is responsible for the following:

- administering the central office review of environmental documents, reviewing and commenting on the disciplines assigned to the Unit, compiling comments from all units in the Environment Section into a unified response and issuing State environmental approvals;

- providing expertise for the Department in the disciplines of socio-economics, agriculture, air quality, and noise, including providing guidance on Departmental research in these disciplines;

- attending district coordination meetings and special project meetings to participate in project decisions and to guide project development;

- establishing environmental consultant prequalification criteria and reviewing consultants' Statements of Experience and Financial Condition to determine eligibility of firms requesting prequalification in environmental categories;

- reviewing and commenting on consultant advertisements, proposals, selection, and negotiations for major projects involving complex environmental documents;

- providing training in environmental matters;

- providing technical advice to the Environmental Policy Unit in the Policy and Procedures Section;

- preparing specific studies and/or sections of text and participating in ad hoc teams to develop or manage environmental documents as requested; and

- providing liaison with other organization units in IDOT and other local, State, and Federal agencies regarding the disciplines assigned to the unit and regarding procedural matters relating to the environmental process.

1-4.03(b) Natural Resources Unit

The Natural Resources Unit is responsible for the following:

- operating and managing the environmental resource surveys for individual projects to identify impacts on biological and wetland resources;

- providing technical expertise on biological resource identification, impact evaluation, mitigation, protection, and management in project development, plan preparation, construction, and operations for such resources as threatened and endangered species, critical habitat for threatened and endangered species, other important ecosystems (e.g., prairies, savannahs), and ecological resources in general;

- providing technical expertise and guidance on water resources including wetlands, water quality, flood plains, and Section 404 permits through the planning, design, construction, and operation phases;

- preparing and/or reviewing all or portions of environmental documents including:

  + Environmental Impact Statements,
  + Environmental Assessments,
  + Categorical Exclusions,
  + 4(f) Reports, and
  + 6(f) Reports;

- preparing and/or reviewing specialized environmental documents:

  + biological assessments,
  + wetland technical reports,
  + wetland banking prospectives,
  + conceptual and final wetland compensation plans,
  + wetland site assessment reports,
  + wetland monitoring reports, and
  + draft 404(b)1 guideline reports;

- providing liaison between the districts and the central office and with local, State, and Federal resource and regulatory agencies (e.g., USFWS, IDNR, USACE, USDOI-NPS);

- disseminating technical environmental information regarding biological resources, water resources, wetlands, flood plains, and Section 404 permits;

- participating in the development of policies and guidance related to natural resources;

- providing technical training on biological resource identification, impact evaluation, development of mitigation, habitat and species protection, management of biological resources on Department-owned land, and incorporation of appropriate features into contract plans; and

- serving on IDOT's Erosion Control Committee.

1-4.03(c) Cultural Resources Unit

The Cultural Resources Unit is responsible for the following:

- directing and managing the cultural resources portion of the Environmental Resource Surveys and Studies Program;

- providing technical expertise regarding prehistoric and historic archaeological sites, historic buildings and bridges, and historic districts to highway districts, Bureau of Local Roads and Streets and, at the direction of the Secretary and/or Director of Highways, to other divisions and offices and other State agencies. Investigations for possible cultural resources must be conducted for proposed project sites, all borrow pits, economic development sites (DCCA), and for any other site which will involve a State transaction;

- meeting with historic resource agencies at the State and Federal levels to resolve project issues and remaining abreast of regulatory changes;

- providing guidance to district and central offices by:

  + attending district coordination meetings,

  + participating in project field meetings or conducting independent field checks, and

  + providing technical training.

- reviewing environmental documents (EAs, EISs technical reports) prepared by district offices or consultants and preparing sections of environmental documents relating to specific cultural resources; and

- advising districts of appropriate responses including avoidance or preservation of significant resources or specific measures to mitigate negative impacts to cultural properties.

1-4.03(d) Geologic and Waste Assessment Unit

The Geologic and Waste Assessment Unit is responsible for the following:

- managing and directing Geologic and Special Waste Surveys on individual projects to identify potential impacts on special waste sites and geological resources (e.g., groundwater, sand, gravel) and potential impacts from geological hazards (e.g., landslides, mine subsidence, earthquakes);

- providing technical expertise and training on special waste problems and evaluations (e.g., underground storage tanks, public health concerns, asbestos, landfills) and expertise on geologic resources and hazards in Phase I and Phase II project development, construction, and operations;

- developing and promulgating Department criteria on the evaluation of special waste sites and geologic resources/hazards;

- developing and promulgating Department procedures for coordination activities with respect to special waste sites and geologic resources/hazards (e.g., Manual for Preparation of Preliminary Environmental Site Assessment, maintenance of waste site list, CERCLIS);

- managing and directing special waste and geological resource/hazard investigations on individual projects to identify the risk and liabilities of waste/geologic hazard sites and impacts to geological resources that can not be avoided;

- establishing consultant prequalification criteria and reviewing consultant Statements of Experience and Financial Condition to determine their eligibility for prequalifications, developing Transportation Bulletin advertisements, reviewing statements of interest, and recommending selection priorities for the hazardous waste category; and

- providing liaison between the districts and central office with the appropriate resource and regulatory agencies (e.g., USEPA, IPEA, OSFM, IDNR).

1-4.04 Preliminary Engineering Section

1-4.04(a) Consultant Unit

The Consultant Unit is, in general, responsible for all activities with respect to consultants up to and including selection of the consultant. The Agreements Unit administers consultant projects. More specifically, the Consultant Unit is responsible for the following:

- prequalifying of architectural/engineering consultant firms;
- in conjunction with the Agreements Unit, setting up funding for consultants;
- preparing the Request for Proposals;
- evaluating and selecting consultant firms;
- compiling consultant performance ratings;
- in conjunction with the Agreements Unit, establishing Department policies and procedures for consultant projects;
- reviewing and recommending action on annual and multiyear highway construction work programs submitted by the Office of Planning and Programming and presenting recommendations on the preliminary needs of the Division of Highways; and
- developing Statewide policies for design, operations, and monitoring district compliance.

1-4.04(b) Agreements Unit

The Agreements Unit is responsible for preparing and securing agreements with architectural/ engineering consultant firms (after selection), railroad companies, utilities, local agencies, and other State agencies. More specifically, the unit:

- reviews, evaluates, and approves agreements prepared by the district offices;
- administers the agreement process within the Central Office (e.g., attaining necessary signatures); and
- develops Department policies and procedures for the administration of all agreements.

1-4.04(c) Electrical and Mechanical Unit

The Electrical and Mechanical Unit is responsible for the following:

- designing and preparing plans for all roadway lighting projects except for District One;
- developing and disseminating Statewide design criteria, practices, and policies on roadway lighting; and
- providing technical review of electrical designs for pumping stations.

1-4.05 Policy and Procedures Section

1-4.05(a) Environmental Policy Unit

The Environmental Policy Unit, in general, prepares the written documentation necessary to ensure that the Department complies with all applicable State and Federal environmental legislation, regulations, and guidelines. More specifically, the unit is responsible for the following:

- maintaining Part III, Environmental Procedures, and Chapter 19 "Public Involvement Guidelines";
- remaining abreast of changes in environmental laws and regulations and determining their impact on Department procedures;
- providing technical assistance to the Environment Section in the Central Office and to the district offices on environmental and public involvement policy and procedural issues; and
- as necessary, publishing explanatory guidance (e.g., as Procedure Memoranda or Information Memoranda) on environmental and public involvement topics.

1-4.05(b) Bicycle and Pedestrian Coordination Unit

The Bicycle and Pedestrian Coordination Unit provides policy and coordinating functions for bicyclist and pedestrian programs and for the Illinois Transportation Enhancement Program. The unit is responsible for the following:

- developing and promulgating Department policy and guidance on the accommodation of bicyclists and pedestrians within the highway program;

- remaining abreast of State and national issues on bicyclist and pedestrian accommodation and determining their impact on Department practices;

- providing technical assistance to district offices on bicyclist and pedestrian issues; and

- ensuring that the Department complies with the regulations and policies governing the FHWA Transportation Enhancement Program.

1-4.05(c) Engineering Policy Unit

The Engineering Policy Unit is responsible for the following:

- researching, preparing, and disseminating design policies and procedures for Phase I and Phase II engineering activities, including Phase I engineering studies, to district offices and central bureaus and providing interpretation of the policies and procedures for case-specific situations;

- developing policies and procedures for the geometric design of highways, intersections, and interchanges which includes alignment and profile guidelines, superelevation design, cross section elements, median types, and capacity analyses;

- remaining abreast of new research developments and incorporating this research, where applicable, into the design policies;

- developing and disseminating procedures for pavement design and rehabilitation;

- developing policies and procedures for 3R, 3P, and SMART projects;

- developing Department policies and criteria for access control on freeways and expressways and for access management on arterial highways;

- developing Department policies and criteria for roadside safety issues including barrier selection and layout, cost/benefit analyses, and clear zones; and

- developing Department policies and procedures for special design elements including accessibility standards for the disabled.

1-4.05(d) Standards and Specifications Unit

The Standards and Specifications Unit is responsible for the following:

- developing and disseminating the *Highway Standards* used in contract plans to districts and central bureaus;

- developing new or revised roadway standards on the basis of internal needs, safety requirements, and new material or product development;

- initiating or reviewing requests for new or revised *Standard Specifications for Road and Bridge Construction* and evaluating their feasibility and impact;

- obtaining FHWA approval for new specifications;

- initiating or reviewing requests for new or revised special provisions and connected details for road and bridge construction and evaluating their applicability; and

- publishing the *Standard Specifications* and *Supplemental Specifications and Recurring Special Provisions* books as required.

1-4.06 Systems and Services Section

1-4.06(a) Technology Support Unit

The Technology Support Unit develops CADD standards and procedures for the Division of Highways. It also provides drafting services to the central office and computer software and hardware support for the Bureau of Design and Environment. More specifically, the unit is responsible for:

- production of the Highway Standards;

- development of CADD standards and procedures for statewide usage;

- production of the CADD Roadway Reference Guide;

- preparation of engineering details and design plans as required;

- supporting PC and mainframe computer systems including ELM, ECM, CBID, word processing, database, spreadsheet, electronic publishing, and engineering applications;

- providing advance planning and development to prepare for future computer requirements; and

- providing user support and training.

1-4.06(b) Support Services Unit

The Support Services Unit provides clerical and administrative support to the entire Bureau of Design and Environment. More specifically, the unit is responsible for:

- word processing and electronic distribution of the Bureau's bulletins:
  - + Construction Contractor's Transportation Bulletin - Notice of Letting,
  - + Weekly Transportation Procurement Bulletin, and
  - + Professional Transportation Bulletin;
- preparing and distributing the Inserted Special Provisions;
- performing data input into ELM for the letting process;
- performing downloads from the mainframe for insertion into the bulletins, e-mail distribution, and publication on IDOT's web site as follows:
  - + As-Read Tabulation of Bids,
  - + Corrected Tabulation of Bids,
  - + For Bid List of Bidders,
  - + Not for Bid List of Bidders, and
  - + Award and Reject Report;
- preparing agreements and related documents;
- typing, formatting and updating of the *Supplemental Specifications* and the *Standard Specifications for Road and Bridge Construction*;
- maintaining a functional database and filing system;
- preparing and maintaining up-to-date record retention schedules; and
- maintaining historical records.

1-4.06(c) Technical Applications Unit

The Technical Applications Unit manages the Bureau's technical applications research to improve production processes in statewide design and plan preparation. The unit:

- researches specialized technical applications;
- evaluates the integration of those technologies into existing production processes; and
- manages the electronic scanning and archiving of project files and documentation.

Chapter Two

PROJECT DEVELOPMENT NETWORK (New Alignment)

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

Chapter Two
PROJECT DEVELOPMENT NETWORK
(New Alignment)

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CHAPTER TWO

PROJECT DEVELOPMENT NETWORK

(New Alignment)

Chapters 2 and 3 document the basic approach used by IDOT in its project development process. Chapter 2 presents Phase I and Phase II networks for projects on new alignment. Chapter 3 presents combined Phase I and Phase II networks for projects on existing alignment requiring major right-of-way purchases (e.g., converting a two-lane facility to an expressway), minor right-of-way purchases (e.g., 3R projects), and projects with no right-of-way acquisition (e.g., Interstate Resurfacing, SMART, 3P). Chapters 2 and 3 present networks that graphically illustrate the development of "typical" highway projects.

2-1 GENERAL

Figure 2-2A presents a network which graphically illustrates the general process for Phase I of a new alignment project which requires separate corridor and design studies. Figure 2-3A illustrates the Phase II project development. Following each figure is a brief description of each activity within the network. When using these figures, consider the following:

1. Precedence Activity Network. The networks or flowcharts are precedence activity networks. An "activity" occurs when a significant, discrete event occurs and/or when the responsibility for the project (activity) is transferred from one unit to another. The "precedence" nature of the network implies that an activity cannot occur until all activities preceding that one have been completed. However, the user must be aware that some flexibility is necessary to apply this network to project development, especially during Phase I. For example, identifying new information during the public involvement stage may require the project study group to return to a previous activity and gather additional data.

2. Project Application. These networks represent an approximate process for a relatively complicated project on new alignment requiring an Environmental Impact Statement (EIS). Not every activity will be applicable to every project and not all activities are shown. However, the user should find that projects that are developed according to this process have fewer management problems.

   The illustrated network assumes a project designed in-house. The process for a consultant-designed project will be similar, except that communication lines exist between IDOT and the consultant for IDOT review and approval.

3. Lines of Communication. The rigid application of the network would lead to predetermined, precise points at which communication occurs between units. This is neither realistic nor desirable. Communication between units must be continuous. This will result in fewer problems and fewer "surprises" in project development.

4. Value Engineering. Under 23 *CFR*, Part 627, FHWA requires that Value Engineering (VE) be applied to all projects on the National Highway System (NHS) which have an estimated cost of $25 million or more. The purpose is to improve project quality, reduce project costs, foster innovations, eliminate unnecessary and costly design elements, and to ensure efficient investment of scarce resources. VE should be an ongoing activity throughout the Phase I process and will require updating as the Phase I network is completed. Because of the ongoing nature, it has not been shown as an activity in Figure 2-2A, but must be considered where applicable.

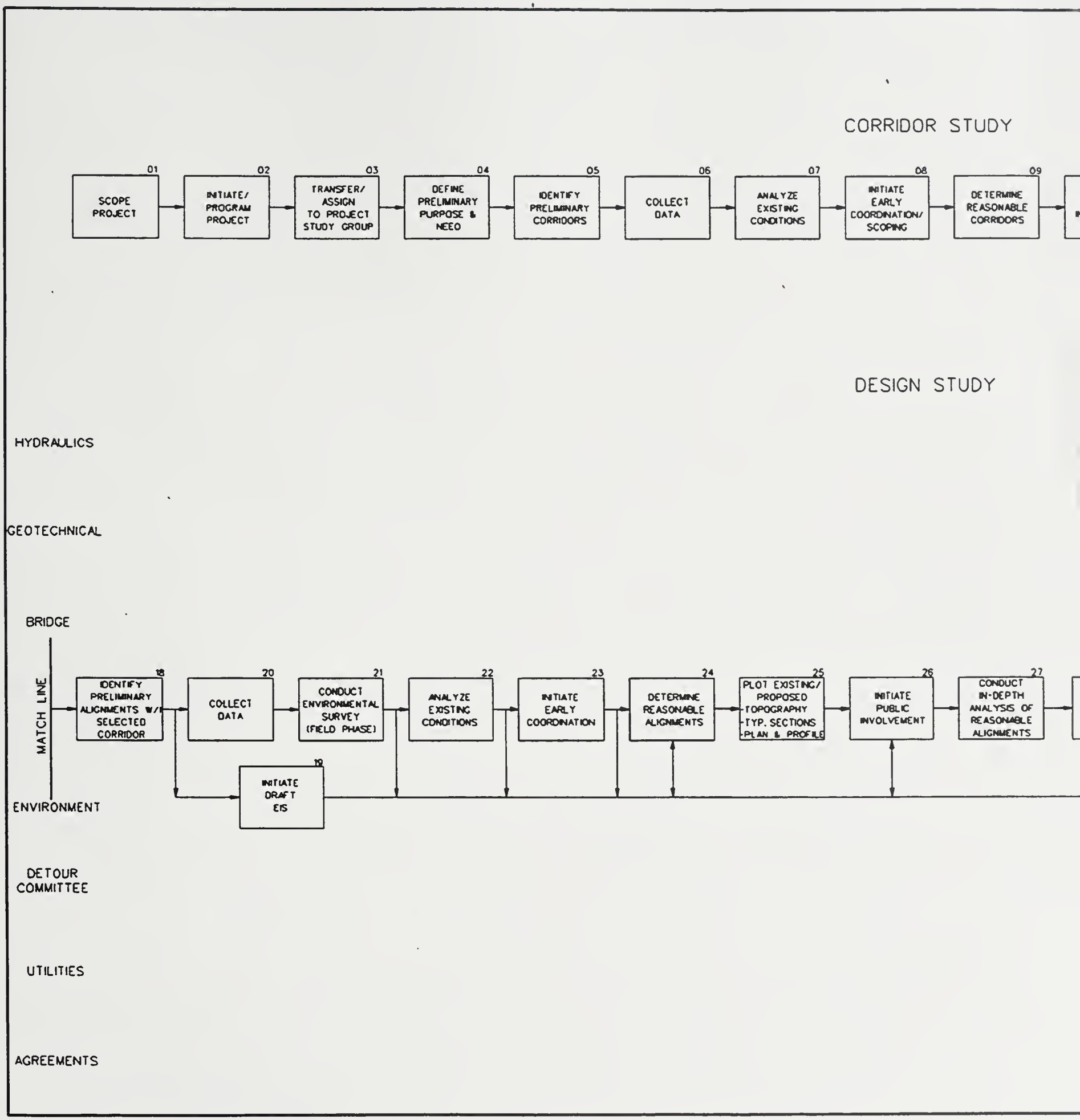
5. Other Manual Chapters. The *BDE Manual* contains several other chapters that provide complementary information to Chapter 2. The designer should review these chapters for more information on the project development process. In particular, Chapter 2 should be used in combination with Chapter 4 "Project Coordination Responsibilities," Chapter 11 "Phase I Studies," Chapter 12 "Phase I Engineering Reports," Chapter 19 "Public Involvement Guidelines," and Chapter 25 "Environmental Impact Statements."

2-2 PHASE I STUDIES

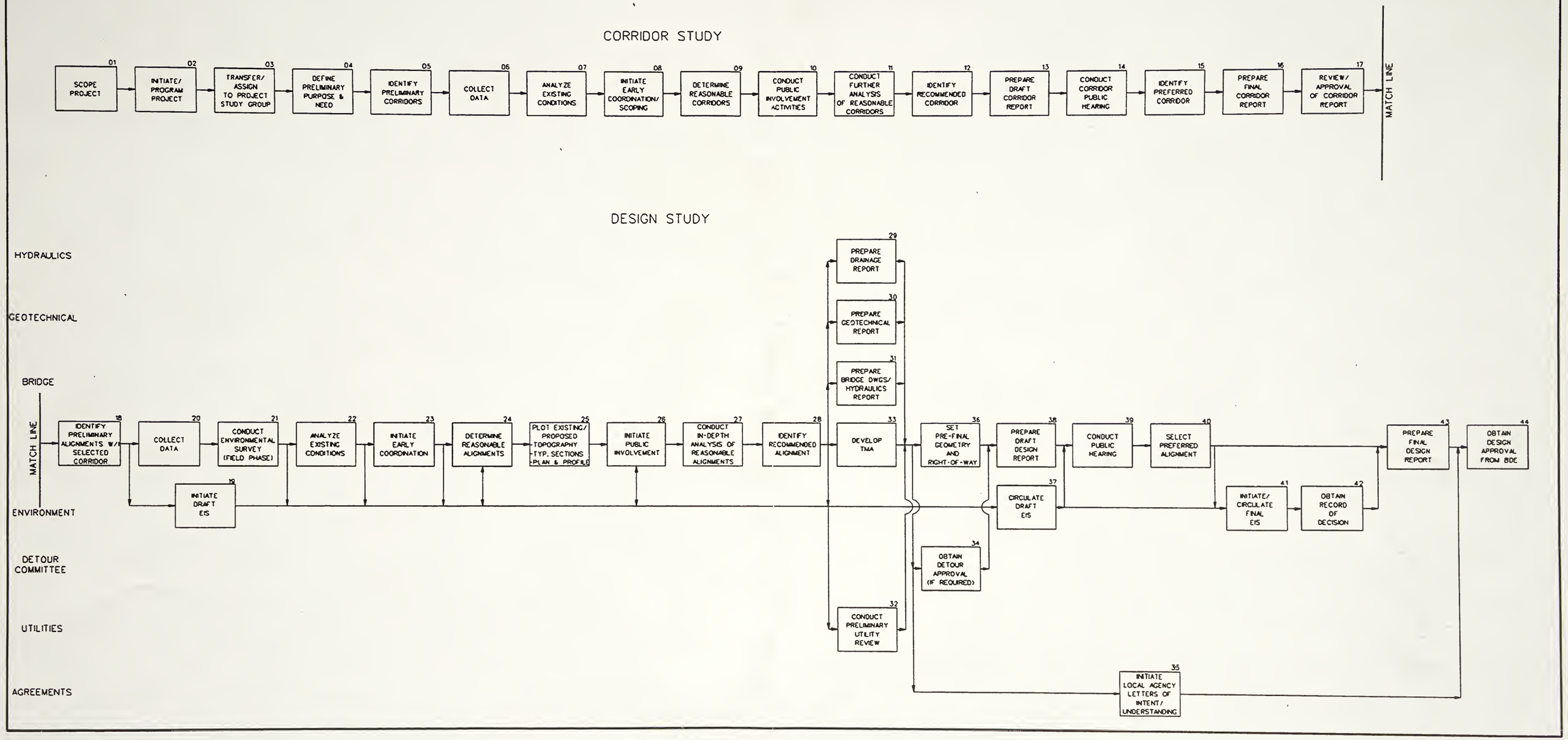
Figure 2-2A illustrates a typical flowchart or network for a major project on new alignment that will require both a corridor and a design study. Activities shown along the main axis of the chart present items which are normally performed by the project study group. The other lines of the chart represent activities by other units or groups. For other project types, see the flowcharts in Chapter 3. Separate corridor studies are usually only prepared for new freeways, for new expressways where two or more existing routes are being considered for upgrading, or for a new two-lane highway proposed on new location. See Chapters 11 and 12.

This network assumes that an EIS will be required for a major project on new alignment requiring a corridor and a design study. If a major project on new alignment does not appear to involve significant environmental impacts, the procedures for development of an Environmental Assessment (Chapter 24) should be followed.

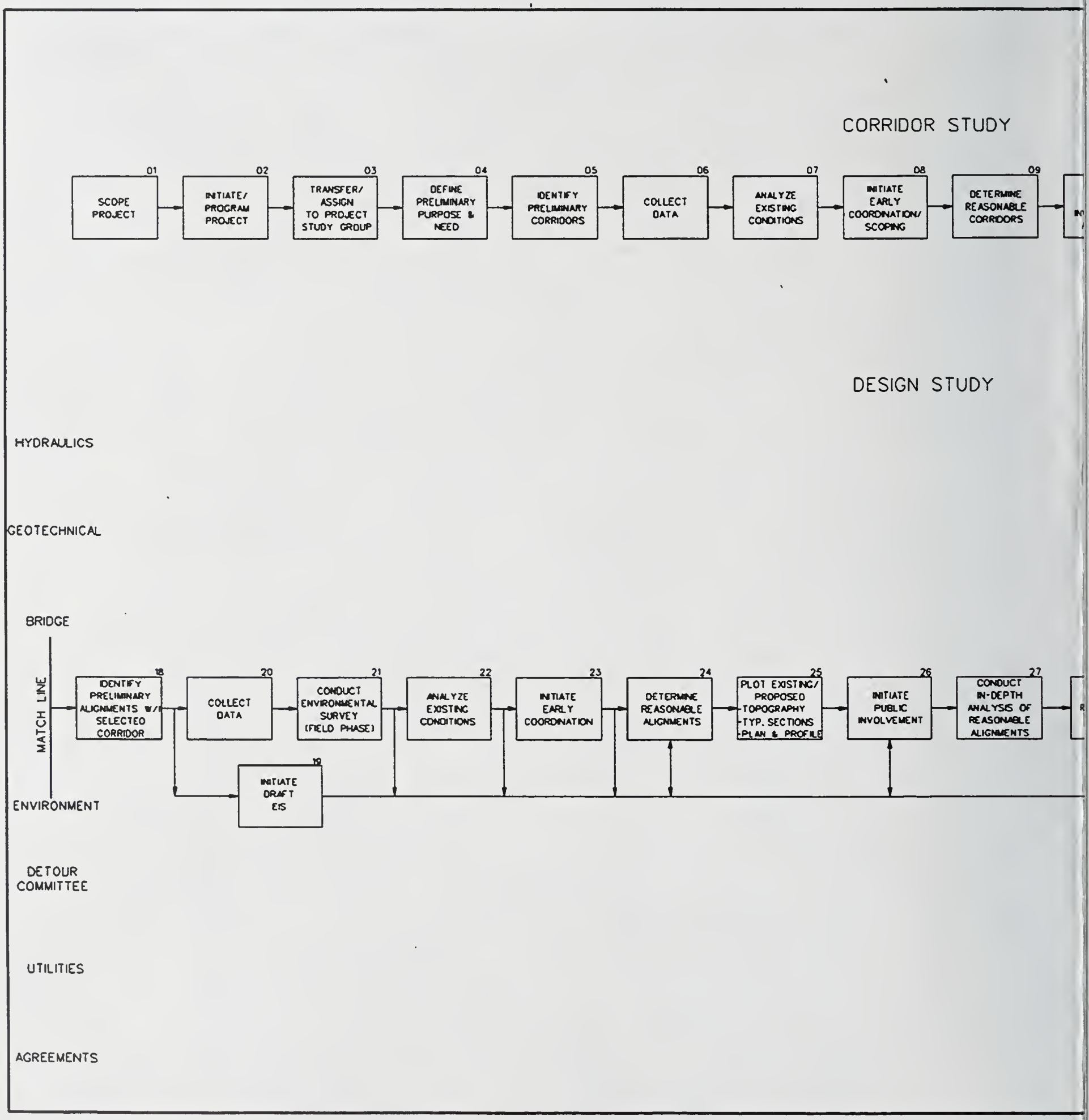
At the time of preparation of Chapter 2, the FHWA's environmental regulations did not require a separate draft and final environmental document and record of decision at the corridor phase. The activity descriptions in this chapter reflect that corridor-phase environmental information will be incorporated in the corridor study report and will be coordinated with interested agencies and the public as a part of that document. Information from the corridor study will be summarized in the draft environmental document at the location-phase so that it will be covered under NEPA.



PHASE I PROJECT DEV
(New Alig
Figure



PHASE I PROJECT DEVELOPMENT NETWORK
(New Alignments)
Figure 2-2A



PHASE I PROJECT DEVE
(New Alig
Figure

PROJECT ACTIVITY (Phase I)

Activity Title: Scope Project

Activity No.: 01

Responsible Unit: District Bureau of Program Development

Activity Description:

A roadway project proposal can originate from a variety of sources, including local officials or metropolitan planning organizations (community-based need), directly from the IDOT district office (district-based need), from a Bureau in the central office (Office of Planning and Programming, BDE, Operations, etc.), and from systems such as the Safety Management System targeting a special need or a Statewide need.

Before a project is entered onto the Department's Proposed Highway Improvement Program, the district Programming Section initially develops and documents the project concept. Developing the project concept will typically involve the following:

- establishing that there is, in fact, a need for the project;
- making a preliminary determination of the project scope of work;
- reviewing any available data and records;
- conducting an initial evaluation of right-of-way, utility, and environmental impacts and the likely level of environmental evaluation;
- developing a rough, preliminary cost estimate;
- determining a proposed schedule (note that, for projects with both corridor and design study phases, the completion schedule may be greater than that of the multi-year program); and
- developing a set of review plans.

This information is forwarded for review and comment to Program Development, Operations, BDE, Environmental Unit, Bridges and Structures, and other individuals, as appropriate. Programming will refine the scope based on the comments received.

Once the scope, cost, and schedule have been defined, district Programming will forward this information to the Office of Planning and Programming for incorporation into the Department's multi-year program (Activity 02).

PROJECT ACTIVITY (Phase I)

Activity Title: Initiate/Program Project

Activity No.: 02

Responsible Unit: Office of Planning and Programming

Activity Description:

Candidate projects are submitted by the districts as a request for project programming to the Office of Planning and Programming. Based on a Statewide assessment of highway improvement needs and available funds, the Office of Planning and Programming will develop the Department's Proposed Highway Improvement Program. This will establish an individual project as an active project for further development.

The Office of Planning and Programming annually issues guidelines for multi-year programming criteria. This includes programming criteria for:

- improvement categories,
- pavement surface conditions,
- deficient bridges,
- safety improvements,
- Interstate rehabilitation,
- widening narrow and deteriorated pavements,
- improving intersections and reducing traffic bottlenecks,
- new construction/reconstruction of major facilities,
- transportation enhancement projects,
- Congestion Mitigation Air Quality (CMAQ) projects, and
- bicycle accommodation.

PROJECT ACTIVITY (Phase I)

Activity Title: Transfer/Assign to Project Study Group

Activity No.: 03

Responsible Unit: Studies and Plans Engineer

Activity Description:

At this point the project will either be assigned to a project study group within the district Bureau of Program Development or to a consultant to begin the corridor study. The Studies and Plans Engineer will have the overall day-to-day responsibility for advancing the project through the Phase I study process. He/she will:

- coordinate directly with other units within the Department;
- attend all internal meetings and field inspections;
- ensure that the project study meets all Department criteria and procedures;
- report directly to the District Program Development Engineer on all significant project activities, problems, and developments; and
- participate in the public involvement process.

The number and expertise of personnel initially assigned to the project study group will vary with the nature and scope of the proposed improvement. The personnel assigned will also vary over time relative to the priority for completion, the available lead time, and the activity in project development under study.

PROJECT ACTIVITY (Phase I)

Activity Title: Define Preliminary Purpose and Need

Activity No.: 04

Responsible Unit: Project Studies Group/BDE/FHWA/Office of Planning & Programming

Activity Description:

For a major transportation project, the project study group must first define the project purpose and need, which will direct the process for the identification of alternatives, in-depth analyses and, ultimately, selection of the preferred alternative. This will consist of reaffirming the need for the proposed improvement, establishing project goals and objectives, and establishing the study area and logical termini. The feasibility of a corridor depends on the social, economic, environmental, and engineering effects of the proposed highway improvement within each corridor. Previous studies and decisions should be reaffirmed and/or updated as necessary. Other factors that must be considered include:

- adequacy of the existing highway network,
- existing traffic volumes and capacity deficiencies,
- crash information,
- alignment and profile deficiencies,
- transportation demand,
- potential cost savings to the traveling public,
- enhanced economic development potential,
- improved access,
- programming guidelines,
- commitments to elected officials, and
- public input.

Further study may result in revisions to the preliminary purpose and need.

See Section 22-6.01 for more information on purpose and need.

PROJECT ACTIVITY (Phase I)

Activity Title: Identify Preliminary Corridors

Activity No.: 05

Responsible Unit: Project Study Group

Activity Description:

Based on the definition of the preliminary purpose and need (Activity 04) and the general design concept (Activity 01), the project study group should identify feasible corridors that could be used. Because this is an evolutionary process, the preliminary list will be narrowed during further evaluations. The evaluation of preliminary corridors should be sensitive to those environmental resources for which the analysis of alternatives for avoidance and minimization of adverse impacts is required (e.g., wetlands, flood plains, Section 4(f) properties, and historic sites). All impractical corridors may be removed from the list with a brief description of why they were removed.

County or other area maps and USGS quadrangle topographic maps, combined with aerial photography, will furnish the locations of towns, streams, railroads, and other topographic features that will assist in defining the study area. Review these maps and locate feasible corridors with respect to local terrain, topographic features, and other controlling items.

The study area is determined through an office-based general overview of area maps and through field trips. Field trips may be facilitated by the prudent use of helicopter flights. The study area is defined as that part of the area of influence within which the facility will be investigated. The limits of the study area may not be the same as the area of influence. Lateral limits are dependent on the distance between the major termini, the function of the highway, and the character of the area traversed.

PROJECT ACTIVITY (Phase I)

Activity Title: Collect Data

Activity No.: 06

Responsible Unit: Project Study Group/Environmental Unit/BDE

Activity Description:

Once the preliminary corridors have been identified (Activity 05), the project study group must gather and inventory information and data on each corridor. All types of data, including social, economic, environmental, and engineering, should be gathered simultaneously. The amount and type of information to be collected will vary with the nature and scope of the proposed improvement. Note that data collection is a continuous process throughout Phase I studies. As the process evolves, additional information must be collected.

Information can be obtained from the following sources:

- State, county, and city maps;
- ASCS photography or IDOT photography;
- USGS quadrangle topographic maps;
- traffic maps and data;
- functional classification maps;
- Federal agency plans (e.g., Army Corps of Engineers, Coast Guard, Department of Interior, Department of Housing and Urban Development, FEMA);
- special development plans (e.g., conservation, industrial, recreational, resource);
- population growth trends;
- utility maps;
- urban area transportation studies;
- other regional planning studies;
- road inventory data from the Illinois Road and Inventory System (IRIS);
- Illinois Department of Natural Resources;
- meetings with local officials;
- meetings with other IDOT units;
- local agency plans and reports (land use maps); and
- soil maps.

In addition, the project study group should review the additional sources listed in Section 11-4.02(b).

PROJECT ACTIVITY (Phase I)

Activity Title: Collect Data

Activity No.: 06 (Continued)

Responsible Unit: Project Study Group/Environmental Unit/BDE

Activity Description:

In gathering environmental inventory data for the corridor study phase, the district will primarily use existing sources of information on known resources in the study area. Many of these sources are provided to the districts from BDE via BDE Technical Environmental Memoranda. These information sources may include the following:

- National Wetland Inventory maps;
- NRCS wetland maps;
- ASCS county soils survey maps;
- flood plain maps;
- listing of Wild and Scenic Rivers;
- information on the locations of parks, recreation areas, and wildlife and waterfowl refuges;
- IEPA stream water quality data; and
- CERCLIS site listings.

This information will be supplemented by data provided by BDE in response to submittal of an environmental survey request form. An example of this type of supplemental information is data obtained from the IDNR Natural Heritage Database on the locations of Class I streams; natural areas and nature preserves.

For additional guidance, see Chapter 27 "Environmental Surveys."

PROJECT ACTIVITY (Phase I)

Activity Title: Analyze Existing Conditions

Activity No.: 07

Responsible Unit: Project Study Group

Activity Description:

Using county or other area maps, USGS quadrangle topographic maps, aerial photography, and other data collected in Activity 06, review the existing conditions within the proposed corridors. Items that should be reviewed include:

- condition of the existing highway network;
- existing traffic volumes and capacity deficiencies;
- crash information;
- alignment and profile deficiencies;
- the locations of towns, streams, railroads, and other topographic features;
- existing and proposed land use from local governments, MPOs, fire districts, schools, etc.;
- environmental resources; and
- sensitive environmental areas.

PROJECT ACTIVITY (Phase I)

Activity Title: Initiate Early Coordination/Scoping

Activity No.: 08

Responsible Unit: Project Study Group/BDE

Activity Description:

Coordination with other Department and governmental agencies, as appropriate, is an important aspect during the corridor study process. This coordination should begin as early as practical in project planning.

The project study group and BDE will initiate early coordination with individuals, organizations, and appropriate local, State, and Federal agencies that have an interest in the project or have information or expertise concerning any issues the project may involve. The purpose of this coordination will be to assist in the identification of reasonable corridors and in the gathering of information for evaluating the social, economic, and environmental impacts of the proposed project corridors and possible impact mitigation measures. Early coordination will also identify the cooperating agencies.

Scoping is an early and open process for determining the scope of issues to be addressed in the corridor study and for identifying the significant issues related to the proposed improvement. Scoping is intended to focus the study effort on issues that are truly significant and avoid the collection of needless detailed information on insignificant issues.

Although scoping may be accomplished by a formal meeting, it is more frequently accomplished through less formal meetings and exchanges of written and verbal communications. Scoping is typically not an individual step, but an ongoing process as part of the overall coordination and public involvement process.

PROJECT ACTIVITY (Phase I)

Activity Title: Determine Reasonable Corridors

Activity No.: 09

Responsible Unit: Project Study Group/Environmental Unit

Activity Description:

The determination of the reasonable corridors for further evaluation is an evolutionary process, which may be summarized as follows:

- identify preliminary corridors (Activity 05);
- perform a rough evaluation of the potential impacts of these preliminary corridors on the inventory of the affected environment to identify, for example, "fatal" flaws;
- incorporate input from agencies and/or the public (Activity 08) in the decision-making process;
- estimate the overall reasonableness of each corridor under consideration;
- ensure that each "reasonable" corridor will accommodate alternates that will satisfy the project purpose and need (Activity 04);
- ensure location of connections can be adequately developed (e.g., interchanges, frontage roads) (see Section 11-4.02(e)); and
- based on an appropriate level of re-evaluation and additional coordination, identify those selected reasonable corridors which are worthy of further evaluation considering:

    + the need to identify potential avoidance and minimization alternatives for environmental reasons,
    + that the cost of the studies for each corridor should be commensurate with its probability of implementation;
    + that, collectively, the selected corridors should cover the full spectrum of alternatives; and
    + that, collectively, the selected corridors should gain public acceptance that no reasonable corridor alternative has been omitted.

Typically, this process will yield two or three reasonable corridors for further evaluation. The "no-action" alternative also must be evaluated for presentation as part of the Corridor Study.

PROJECT ACTIVITY (Phase I)

Activity Title: Conduct Public Involvement Activities

Activity No.: 10

Responsible Unit: Project Study Group/Environmental Unit

Activity Description:

Once the reasonable corridors have been selected (Activity 09), the public should be provided an opportunity to become acquainted with the project and express its views. The public involvement program is first initiated by advising the public that a study is underway. As the project progresses, the district should offer opportunities for the public to receive updated information on the status of the project and provide input and comment. This will culminate in the corridor phase with Activity 14 "Conduct Corridor Public Hearing" when the public will be offered a formal opportunity to comment on the corridor alternatives under consideration. Public involvement should be an ongoing process as the project development evolves.

For detailed information on public involvement activities, see Chapter 19.

PROJECT ACTIVITY (Phase I)

Activity Title: Conduct Further Analysis of Reasonable Corridors

Activity No.: 11

Responsible Unit: Project Study Group/Environmental Unit

Activity Description:

For each selected reasonable corridor (Activity 09), the project study group will identify and evaluate the socio-economic, environmental, and engineering issues, including those identified through agency coordination and public involvement, that would be involved in the development of more detailed alternatives within the corridor. The evaluation of these issues must be presented at a comparable level of detail for each reasonable corridor and in a manner to facilitate comparison among the corridor alternatives. Some of the issues that should be evaluated include:

- land use;
- habitat;
- drainage impacts and construction in flood plains;
- projected ADTs;
- fire districts, mail routes, school districts, drainage districts, and taxing districts;
- recommendations from existing Geotechnical Reports;
- locations of major utility installations;
- other transportation facilities (e.g., commuter and freight railroads, airports, bus and trucking terminals);
- urban area transportation study reports and other data;
- regional planning agency reports;
- interagency comments (Activity 08);
- route planning considerations (see Section 11-3);
- estimated cost for each alternative (See Section 11-4.03(d));
- private and commercial property owner reports;
- location of cemeteries, 4(f) land, wetlands, threatened and endangered species/habitat, historic structures, archaeological sites, and special waste sites;
- water towers;
- coal mines; and
- other similar issues.

PROJECT ACTIVITY (Phase I)

Activity Title: Identify Recommended Corridor

Activity No.: 12

Responsible Unit: Project Study Group/Environmental Unit/BDE

Activity Description:

After conducting the analysis of each reasonable corridor (Activity 11), the project study group in conjunction with the Environmental Unit will determine the recommended corridor alternative. In identifying a recommended corridor, give careful consideration to cost-effectiveness, potential socio-economic and environmental impacts, system connections, and potential for positive impact on affected communities as well as satisfying the purpose and need. The selected alternative corridor and description of why it was selected should be forwarded to BDE for review and approval prior to beginning the preparation of the draft Corridor Report (Activity 13) and before it is presented at the Corridor Public Hearing (Activity 14).

PROJECT ACTIVITY (Phase I)

Activity Title: Prepare Draft Corridor Report

Activity No.: 13

Responsible Unit: Project Study Group

Activity Description:

Once the analyses have been sufficiently conducted and the information and data gathered, the project study group will prepare the draft Corridor Report. Chapter 12 presents the format that should be used to prepare a Corridor Report. Because the corridor study should be essentially complete, it should be possible to prepare the draft Corridor Report in near-final format. The discovery of new, significant information during the Corridor Public Hearing (Activity 14) should be rare if the corridor study has been properly developed. With the exception of changes necessary to reflect input from the public hearing, a final Report should only need information concerning the public involvement and the final conclusion/recommendation section.

In general, the draft Corridor Report should be submitted to BDE for review prior to its availability to public viewing and inspection at the Corridor Public Hearing. Formal approval by BDE for release is not normally issued. Copies made available to the public should be marked as "draft" or "preliminary."

The Corridor Report should include:

- a discussion on the purpose and need for the project;
- County maps in 11 in x 17 in sheets showing all corridors studied, all acceptable corridors, and existing and proposed land uses;
- USGS quadrangle maps showing topography and other details;
- existing and expected traffic data;
- discussion on prior studies;
- eliminated alternatives;
- advantages and disadvantages of the selected corridor alternative;
- environmental concerns;
- impacts on existing communities;
- results of public involvement and environmental coordination; and
- estimate of costs.

PROJECT ACTIVITY (Phase I)

Activity Title: Conduct Corridor Public Hearing

Activity No.: 14

Responsible Unit: Project Study Group/Environmental Unit

Activity Description:

The Corridor Public Hearing is conducted at this stage of the study to present to the public, and other interested organizations and agencies, the corridor alternative under final consideration, a summary of the analyses of alternatives, and the criteria used to select the recommended corridor.

The project study group and the district Environmental Unit will evaluate all comments from the Public Hearing and will prepare responses to these comments as appropriate. Possible responses include:

- modifying alternatives including the proposed action;
- developing and evaluating alternative corridors previously given serious consideration;
- supplementing, improving, or modifying analyses;
- making factual corrections; or
- explaining why the comments do not warrant further agency response, citing the sources, authorities, or reasons which support that position and, if possible, indicating those circumstances which would trigger reappraisal or further response.

Chapter 19 discusses the requirements for public hearings, public information meetings, and responding to comments received during the public hearing.

PROJECT ACTIVITY (Phase I)

Activity Title: Identify Preferred Corridor

Activity No.: 15

Responsible Unit: Project Study Group

Activity Description:

Based on the results of the Corridor Public Hearing (Activity 14) and previous study analyses, the project study group will select the preferred corridor for the project. The selected corridor, and its advantages and disadvantages, will be documented in the final Corridor Report (Activity 16).

PROJECT ACTIVITY (Phase I)

Activity Title: Prepare Final Corridor Report

Activity No.: 16

Responsible Unit: Project Study Group

Activity Description:

After analyzing the comments received from the public and other agencies, the project study group will determine if any changes are necessary in the draft Corridor Report and if any relevant issues have been overlooked. If an oversight has occurred, additional data and studies may be required to explain the resultant effects and to determine what changes, if any, are necessary.

After the review and analysis of comments is complete and the appropriate revisions incorporated, the final Corridor Report may be prepared. Activity 13 and Chapter 12 present the information and format that should appear in the Report.

PROJECT ACTIVITY (Phase I)

Activity Title: Review/Approval of Corridor Report

Activity No.: 17

Responsible Unit: BDE/Environmental Unit/FHWA

Activity Description:

Once the final Corridor Report has been completed, the project study group will forward the Corridor Report to BDE, the district Environmental Unit, and FHWA, if applicable, for review and approval. When approval is received for the Corridor Report, the corridor study portion of Phase I will be complete.

PROJECT ACTIVITY (Phase I)

Activity Title: Identify Preliminary Alignments within Selected Corridor

Activity No.: 18

Responsible Unit: Project Study Group

Activity Description:

This step initiates the design study portion of Phase I. Typically, some delay will occur between the corridor study and design study. Therefore, the project study group should review the Corridor Report and project files from the corridor study to become familiar with the decisions and determinations, commitments to local officials, and public input made during the corridor study. Also, the project study group will ensure that the corridor decisions are still valid. Throughout the design study process, reaffirm the approved corridor as contacts are made with planning agencies. Also, assess any changes in land use or development plans to determine if corridor modifications should be considered. This is especially important if several years have elapsed between the corridor and design studies or if new information is discovered during the more in-depth design analysis.

Using county maps, USGS quadrangle maps, and aerial photography, identify and lay out possible alignments within the corridor on base maps (see Chapter 11). Also include the no-action alternative in the design study. A possible alternative may include improving existing highways within the corridor. Set interchange locations and determine general horizontal alignment for each alignment. The selection of the preliminary alignments will define what information will be collected in Activity 20 and will initiate the EIS process in Activity 19.

At this stage, request project mapping based on the identified alignments. However, note that many times insufficient information will be available at the time mapping is requested and, therefore, some judgment must be used in deciding the width limits of mapping. Additional mapping can be requested later during the design study if needed for further alignment investigations.

PROJECT ACTIVITY (Phase I)

Activity Title: Initiate Draft EIS

Activity No.: 19

Responsible Unit: Environmental Unit

Activity Description:

Once the information has been received on the preliminary alignments (Activity 18), the Environmental Unit will initiate the preparation of the draft EIS (see Section 25-2 (Activities 01, 02, and 07)).

To provide NEPA coverage of the corridor-phase study information, that information should be summarized in the draft EIS.

PROJECT ACTIVITY (Phase I)

Activity Title: Collect Data

Activity No.: 20

Responsible Unit: Project Study Group

Activity Description:

In this Activity, the collection of data for each alignment identified in Activity 18 will begin. Note that data collection is an on-going process throughout the design study phase. Data gathering may begin with a review of information available in the district and central offices. Some of the information that is gathered includes:

- roadway, field, aerial, and stream surveys;
- existing roadway classifications and truck routes;
- crash rate maps and collision diagrams;
- pavement and bridge condition reports;
- ADT traffic maps and DHVs for current and design year traffic (all affected routes);
- inventory of posted speed limits;
- detailed transportation maps and plans with all modes of travel included;
- utility installations and detailed maps from utility companies;
- hydraulics survey, drainage survey, sewer atlas, and flooding information tables;
- fire districts, mail and school bus routes, location of churches, drainage districts, historic sites, and field-tile maps;
- commercial, agricultural, industrial, recreational, historic, and residential land use;
- conservation areas, archaeological sites, wetlands, special waste sites, etc.;
- local, State, and Federal agency coordination needs;
- maintenance information on existing routes;
- current topographic mapping at a scale of 1 in = 50 ft (1:500 metric) in urban areas and 1 in = 200 ft (1:2500 metric) in rural areas on new alignment or 1 in = 50 ft (1:500 metric) in rural areas where existing alignment is studied;
- current aerial photographic mosaics at a scale of either 1 in = 100 ft (1:1000 metric) or 1 in = 200 ft (1:2500 metric) in urban areas and aerial photography at 1 in = 400 ft (1:5000 metric) or 1 in = 600 ft (1:7500 metric) in rural areas;
- geotechnical investigations;
- highway geometrics, development of access control plans, and right-of-way issues;
- joint development uses, scenic easements, and aesthetics of highway (see Chapter 33); and
- cost estimate (see Section 11-2.15) and road-user benefits (see Section 11-7.01).

See Chapters 11 and 12 for further guidance on the information that should be collected for a design study. Also see Section 25-2 (Activity 04).

PROJECT ACTIVITY (Phase I)

Activity Title: Conduct Environmental Survey (Field Phase)

Activity No.: 21

Responsible Unit: Project Study Group/Environmental Unit /BDE

Activity Description:

During the corridor study phase, BDE will have conducted a preliminary environmental inventory (Activity 06). For Activity 21, the project study group in conjunction with BDE will determine if further field work is necessary to verify or further evaluate the location, nature, and extent of potential resource involvement. For this Activity, the district forwards a request to BDE to conduct an environmental survey.

Based on the preliminary alignments identified in Activity 18, BDE will determine whether any further work is necessary to delineate the limits of or otherwise evaluate sensitive resources the project may affect. If determined necessary, BDE will coordinate, as appropriate, with the responsible agencies and the project study group for the field survey(s). BDE will provide the results of the reconnaissance survey(s) and any related studies for resource delineation or evaluation to the district office.

The district will consider the environmental resource information in further development of the project and, for resources within the project limits (e.g., wetlands, natural areas, archaeological and historical sites), the district will evaluate options for avoiding and minimizing the project's effects on the resources. If adverse effects to environmental resources cannot be avoided, the project study group/Environmental Unit, in cooperation with BDE, will evaluate whether any further studies of the resources are necessary. If further studies are needed, BDE will initiate action to have the studies accomplished, considering program priority and project scheduling.

BDE will provide information to the district office regarding environmental study findings, results of coordination with outside agencies, and any recommendations for further coordination or action by the district office. This information will also be used by the Environmental Unit in preparing the draft EIS.

For additional guidance on field surveys, see Chapter 27.

PROJECT ACTIVITY (Phase I)

Activity Title: Analyze Existing Conditions

Activity No.: 22

Responsible Unit: Project Study Group

Activity Description:

Using county or other area maps, USGS quadrangle topographic maps, aerial photography, the Corridor Report (Activity 17), data collected in Activity 20, and the environmental survey (Activity 21), the project study group will review and identify the following existing conditions:

- the locations of towns, streams, railroads, and other topographic features;
- condition of the existing highway network within the corridor;
- existing traffic and capacity deficiencies;
- crash information;
- alignment and profile deficiencies;
- existing and planned land uses from local governments, MPOs, fire districts, schools, etc.;
- existing drainage patterns;
- sensitive noise receptors;
- wetlands and applicable 4(f), 6(f), and 106 sites, etc.;
- special waste sites; and
- tree and vegetation inventory.

Upon receipt of the topographic mapping, plot the property lines, property names, names of roads, and all other important cultural features. Make paper copies of the mapping sheets and tape together. This procedure allows the project study group to review long lengths of the alignment in one view and to see how lines may best fit together. Begin laying out all feasible alignments.

After an alignment is laid out, determine the State plane coordinates of all control points (POTs and PIs) from the project mapping. Input this information and the radii of horizontal curves into a computer file to mathematically describe each alternative. Once an alignment is mathematized and tied into digitized mapping files, the alignment can then be stationed from west to east or south to north and the information stored as a computer file for further design work.

Provide the results of this activity to the Environmental Unit to allow them to prepare the draft EIS.

PROJECT ACTIVITY (Phase I)

Activity Title: Initiate Early Coordination

Activity No.: 23

Responsible Unit: Project Study Group

Activity Description:

Activity 08 discusses early coordination within the context of a corridor study; the project study group will engage in a similar early coordinated effort for the design study.

At this stage of the design study process, the project study group will begin early coordination with other Department Units or Bureaus and governmental agencies (e.g., FHWA, Land Acquisition, Construction, Operations, Bridges and Structures, Utilities, environmental resource agencies). The purpose of this coordination will be to assist in the identification of reasonable alignment alternatives and in gathering information to evaluate the social, economic, and environmental impacts of the proposed project and possible impact mitigation measures. This coordination should begin as early as practical.

Provide the results of this activity to the Environmental Unit to allow them to prepare the draft EIS.

Also see Section 25-2 (Activity 06).

PROJECT ACTIVITY (Phase I)

Activity Title: Determine Reasonable Alignments

Activity No.: 24

Responsible Unit: Project Study Group/Environmental Unit

Activity Description:

The project study group in conjunction with the Environmental Unit will review the alignments identified in Activity 18 and reduce the number of alternatives to a reasonable number that are representative of the spectrum of possible alternatives that satisfy the project purpose and need. This will typically be two to three alternatives, including the no-action alternative. An in-depth analysis will be conducted on each of the remaining alternatives (Activity 27).

Using the base maps prepared in Activity 18, the information gathered in Activities 20 and 21, and the analyses conducted in Activity 22, revise or eliminate any alternative alignments that are undesirable because of adverse engineering, environmental, economic, or social effects. An estimate of costs may be necessary to further determine which alternatives may warrant elimination. Document the reason(s) why an alignment has been discarded. Include this information in the final Design Report and EIS. Ensure that each of the remaining alternatives still meets the project's defined purpose and need.

Also see Section 25-2 (Activity 10).

PROJECT ACTIVITY (Phase I)

Activity Title: Plot Existing/Proposed Topography, Typical Sections, Plan and Profile

Activity No.: 25

Responsible Unit: Project Study Group

Activity Description:

For each remaining alternative alignment identified in Activity 24, conduct the following:

- If not already done, plot the existing topography including property lines, property owner names, business names and type, names of roads, and all other important geographic and cultural features.
- Determine the proposed typical sections.
- Determine the detailed horizontal alignment, including radii, stationing, and State plane coordinates of all control points (e.g., POTs, PIs, PCs, PTs).
- Investigate alternative vertical profiles for each alignment. This may require designing two to three trial vertical profiles and performing several complete earthwork calculations; see Sections 11-2.05 and 11-5.04(d).
- Once the geometric elements have been set, determine the preliminary right-of-way limits for each alternative.
- Determine the rough quantities for each alternative and refine the cost estimate for each alternative. If no quantities are available, use a generalized cost (e.g., cost per mile (kilometer)); see Sections 12-4 and 65-1.02.

IDOT uses the computer software program GEOPAK for laying out alignments, profiles, cross section designs, quantity calculations, and for determining construction limits. GEOPAK also can be used to generate 3-D and perspective plots for any portion of the roadway. Use 3-D plots in the design process to assess potential safety problems and the aesthetics of each alternative.

PROJECT ACTIVITY (Phase I)

Activity Title: Initiate Public Involvement

Activity No.: 26

Responsible Unit: Project Study Group/Environmental Unit

Activity Description:

This Activity will allow the public an opportunity for input and comment on the alternatives selected in Activity 24. Typically, this will consist of informational letters, advertisements, and/or meetings with local government officials, fire districts, school districts, drainage districts, historic commissions, MPOs, residents, businesses, etc. These meetings or letters may include:

- advising local, State, and Federal officials that a project has been initiated;
- procedures for developing possible coordination and public service involvement;
- a discussion on the project scope;
- a request for information (e.g., MPO plans, drainage problems, transit needs);
- a discussion with businesses, railroads, and utility companies; and
- talking with individuals at public information meetings about individual concerns.

Public coordination must be continuous throughout the project development. For guidance on public coordination, see Chapter 19.

PROJECT ACTIVITY (Phase I)

Activity Title: Conduct In-Depth Analysis of Reasonable Alignments

Activity No.: 27

Responsible Unit: Project Study Group

Activity Description:

During the initial development of alignment alternatives, some analyses will have been conducted as attempts to fit various options into the project location. After the reasonable alignments have been identified (Activity 24) and the information is plotted on the plan sheets (Activity 25), further analyses will be necessary to assess the capability of each alternative to accomplish the project goals cost effectively. Conduct an in-depth analysis of each of the proposed alignments considering the social, economic, environmental, and engineering factors discussed in Part II, Project Development, and Part III, Environmental Procedures.

The engineering and environmental analyses may include:

- intersection design studies,
- interchange type and design studies,
- capacity analysis,
- initial impact and mitigation alternatives,
- wetlands involvement,
- air and noise impacts,
- impacts on cultural resources,
- tree and vegetation evaluation,
- water quality and natural resources impacts, and
- soils evaluation.

After the results of these investigations have been analyzed, there may be legitimate reasons to eliminate one or more of the final alignment alternatives. Discuss the reason why these alignment(s) were not further considered in the Design Report and EIS. For instance, traffic estimates for the no-action alternative may overload existing routes creating unacceptable congestion and, thereby, eliminate this alternative.

The results of this and previous Activities will be submitted to the Hydraulics Unit, Geotechnical Unit, Bureau of Bridges and Structures, Environmental Unit, and Project Support Section to allow these Units to prepare their applicable reports for the Design Report.

Also see Section 25-2 (Activities 12 and 13).

PROJECT ACTIVITY (Phase I)

Activity Title: Identify Recommended Alignment

Activity No.: 28

Responsible Unit: Project Study Group

Activity Description:

Considering the environmental, social, and economic impacts, engineering factors, and public input, the project study group will identify a preferred alignment through the corridor. If there are two or more alignments with essentially the same impact, the project study group still should select one recommended alignment. The final geometric and right-of-way design will be based on this recommended alignment. Also, this alignment should be presented as the recommended alignment at the public hearing (Activity 39).

PROJECT ACTIVITY (Phase I)

Activity Title: Prepare Drainage Report

Activity No.: 29

Responsible Unit: Hydraulics Unit

Activity Description:

Based on the information provided from the project study group (Activity 28), the Hydraulics Unit will perform the hydrology/hydraulics analysis, including the following:

- culvert sizing,
- longitudinal encroachments,
- storm drainage facilities,
- stormwater management, and
- pump stations.

Based on its evaluation, the Hydraulics Unit will prepare a Drainage Report. The project study group will use this information in making the final alignment determinations. It will also incorporate the Drainage Report into the final Design Report. See Chapter 40 and the *IDOT Drainage Manual* for more information on Drainage Reports.

PROJECT ACTIVITY (Phase I)

Activity Title: Prepare Geotechnical Report

Activity No.: 30

Responsible Unit: Geotechnical Unit

Activity Description:

Based on the information provided from the project study group (Activity 28), the Geotechnical Unit will prepare the Geotechnical Report. The analyses may include:

- basic soil properties (e.g., AASHTO soils classification);
- shrink/swell factors;
- properties of subsurface strata;
- potential for slides;
- slope stability at proposed cuts; and
- the development of a boring plan for any proposed bridges (e.g., location, spacing, and depth).

Based on its evaluation, the Geotechnical Unit will prepare a Geotechnical Report. The project study group will use this information in making the final alignment determinations. In addition, the Geotechnical Report will be incorporated into the final Design Report. See the *IDOT Geotechnical Manual* for more information.

PROJECT ACTIVITY (Phase I)

Activity Title: Prepare Bridge Drawings/Hydraulics Report

Activity No.: 31

Responsible Unit: Bureau of Bridges and Structures/Project Study Group

Activity Description:

Based on the information provided from the project study group (Activity 28), the Bureau of Bridges and Structures will prepare the Proposed Structure Sketch for major structures, which will illustrate:

- the type of structures,
- approximate horizontal and vertical alignment and skew,
- approximate pier locations, and
- typical bridge deck section.

The project study group will prepare this sketch for other than major structures.

See Chapter 39 for more information. The Bureau of Bridges and Structures will also prepare the Hydraulics Report for major structures. This will involve:

- the hydraulic analysis to determine the necessary dimensions of the waterway opening to pass the design flood, to meet the backwater allowances, and to satisfy any regulatory flood plain requirements;

- the hydraulic scour analysis to assist in determining the proper foundation design for the bridge; and

- a suggested freeboard elevation.

The project study group will prepare this report for other structures and the Bureau of Bridges and Structures will approve the report.

The Structure Sketch and Hydraulics Report will be incorporated into the final Design Report.

PROJECT ACTIVITY (Phase I)

Activity Title: Conduct Preliminary Utility Review

Activity No.: 32

Responsible Unit: Project Support Section

Activity Description:

The project study group will provide the district Project Support Section with copies of the plan sheets for the recommended alignment. The Project Support Section will work with the applicable utility companies to identify project impacts on existing utilities and inform them of environmental issues which may affect their adjustments and relocations. The following items of work are typically performed:

1. Underground. The Project Support Section will coordinate with the district survey crew and will, if needed, request an underground survey to determine the depths and location of existing underground utilities within the project limits, especially fiber optic cables, water supply, and sanitary lines in urban areas.

2. Overhead. Any major above-ground utilities which may be impacted by the project. The Project Support Section may prepare a cost estimate to determine if a special effort should be exercised to avoid certain utilities.

3. Impacts. The Project Support Section will notify any utility companies which will be potentially impacted by the upcoming project, and the Section will request that the Utility contact IDOT if it plans any work in the vicinity of the project.

The Project Support Section will document its findings in a report or memorandum and submit it to the project study group. The project study group will use the information in making the final alignment determinations and document its findings in the Design Report.

For additional guidance on utility coordination, see Chapter 6.

PROJECT ACTIVITY (Phase I)

Activity Title: Develop Traffic Management Analysis

Activity No.: 33

Responsible Unit: Project Study Group

Activity Description:

The maintenance of traffic flow during construction of a State highway will involve traffic and worker safety, public relations, and capital costs to the Department. A well-planned method for maintaining traffic flow can minimize complaints from the traveling public and from residents and businesses along the affected route. Each construction site must be evaluated on its own merits as to the appropriate method for maintaining traffic. The Design Report should contain a Traffic Management Analysis (TMA) indicating an overall strategy for accommodating traffic during construction. Chapter 13 presents the goals and objectives for a TMA. The TMA should address the preferred traffic control method, alternative traffic control applications, geometric design criteria, the impact traffic will have on other facilities, local concerns, cost effectiveness of various alternatives, etc. Chapter 55 and the *Highway Standards* provide the design criteria to use when designing a traffic control plan. In addition, consider the following:

- The TMA not only must address the alternatives confined to the project site, but it must also evaluate the impact traffic will have on the entire corridor.
- For large projects, a TMA team may be organized during Phase I to study the traffic control alternatives and their effect on the corridor. Section 13-1.04(b) provides guidance on the makeup and responsibilities of the TMA team.
- If improvements are required to other facilities (e.g., widening of detour routes), it is important that these improvements be implemented as soon as practical prior to construction of the mainline facility. Allow local agencies sufficient opportunity to complete their improvements before construction on the State route begins. Agreements or concurrence may be necessary between the State and local agencies to determine cost sharing arrangements and/or approval of a local road as a detour route (Activity 35).
- No formal public involvement activity (e.g., design hearing) should occur until the recommended alternative in the TMA Report has been approved by BDE. However, informal public involvement will be necessary during the analysis of alternatives.

PROJECT ACTIVITY (Phase I)

Activity Title: Obtain Detour Approval (if required)

Activity No.: 34

Responsible Unit: Detour Committee

Activity Description:

In general, the TMA (Activity 33) will be approved as part of the Design Report. Where there is a road closure with a marked detour, forward the TMA to BDE for review and approval from the Detour Committee. For an unmarked State highway road closure or for a road proposed to remain open by either stage construction or a runaround, the TMA will be approved by the appropriate BDE field engineer. For a closed unmarked State highway, also coordinate with the local county officials prior to the submittal of the Design Report.

PROJECT ACTIVITY (Phase I)

Activity Title: Initiate Local Agency Letters of Intent/Understanding

Activity No.: 35

Responsible Unit: Project Support Section

Activity Description:

Based on the public involvement, decisions made in Activity 26, and the selection of the recommended alignment (Activity 28), the Project Support Section will initiate the preparation of any necessary letters of intent or letters of understanding with local officials. These may be prepared for:

- concurrence between the State and local agencies to determine cost sharing arrangements,
- approval of a local road as a detour route,
- determining maintenance responsibilities once the project is completed, and/or
- letters of support for the improvement.

For additional guidance, see Chapter 5.

PROJECT ACTIVITY (Phase I)

Activity Title: Set Pre-Final Geometry and Right-of-Way

Activity No.: 36

Responsible Unit: Project Study Group

Activity Description:

Based on the previous analyses for the recommended alignment (Activity 28) and information provided by others (Activities 29, 30, 31, and 32), the project study group will:

- make any necessary adjustments to the selected vertical and horizontal alignments;
- make any necessary adjustments to the typical sections;
- develop access control plans for freeways, expressways, and by-passes (see Section 11-5.04(f) and Chapter 35);
- set preliminary construction limits;
- set preliminary right-of-way limits;
- determine any easement requirements; and
- determine if any utility adjustments or displacements are necessary.

See Part IV, Roadway Design Elements and Part V, Design of Highway Types, for detailed information on geometric design and the *IDOT Land Acquisition Manual* for guidance on right-of-way impacts.

PROJECT ACTIVITY (Phase I)

Activity Title: Circulate Draft EIS

Activity No: 37

Responsible Unit: Environmental Unit

Activity Description:

The actions described in Section 25-2 (Activities 14, 15, 16, and 17) will apply to the preparation and processing of the draft EIS for circulation. Circulation of the draft EIS must be completed prior to conducting the public hearing (Activity 39).

PROJECT ACTIVITY (Phase I)

Activity Title: Prepare Draft Design Report

Activity No.: 38

Responsible Unit: Project Study Group

Activity Description:

Once the analyses have been conducted and the information gathered, the project study group will prepare the draft Design Report. Chapter 12 presents the format that should be used when preparing a Design Report. Because the design study should be essentially complete, it should be possible to prepare the draft Design Report in its near-final format. The discovery of new, significant information during the Public Hearing (Activity 39) should be rare if the design study has been properly developed. With the exception of changes necessary to reflect input from the public hearing (Activity 39), a final Design Report should only need information concerning the public involvement and the final conclusion/recommendation section.

In general, the draft Design Report should be submitted to BDE for review prior to its availability for public viewing and inspection at the Public Hearing. Formal approval by BDE for release is not normally issued. Copies made available to the public should be marked as "draft" or "preliminary."

The Design Report should include:

- a summary of purpose and need of the project;
- a list and results of prior studies;
- a list of all alternative alignments eliminated earlier and the reasons for their elimination;
- a summary of major design features and policies;
- a discussion on the compatibility of the alternatives with existing streets and highways;
- a summary of the environmental factors considered;
- a discussion on the advantages and disadvantages of the reasonable alignments studied in-depth;
- the results of public involvement;
- the proposed maintenance and protection of traffic plan;
- a list of commitments made to the public;
- the reasons and determination for selecting the preferred alignment;
- plan and profile of the preferred alignment;
- the estimate of costs for each alternative;
- exhibits showing typical sections, aerial photography, mapping, etc.;
- copies of analyses; and
- documentation for approval of other reports conducted during the design study.

For further guidance on information to be included in the Design Report, see Chapter 12.

PROJECT ACTIVITY (Phase I)

Activity Title: Conduct Public Hearing

Activity No.: 39

Responsible Unit: Project Study Group/Environmental Unit

Activity Description:

The Public Hearing is conducted at this stage of the design study to present to the public, and other interested organizations and agencies, the alignment alternative under consideration, a summary of the analyses for the various alternatives determined not to be feasible, and the criteria used to select the recommended alignment. Other Department Sections or Bureaus (e.g., Land Acquisition), as necessary, may attend the Public Hearing to answer specific questions relative to their expertise.

Corridor protection should also be addressed at the Public Hearing. Chapter 12 and the IDOT *Land Acquisition Manual* provide guidance on corridor protection.

The project study group and the district Environmental Unit will evaluate all comments from the Public Hearing and will prepare responses to these comments as appropriate. Possible responses include:

- modifying alternatives including the proposed action;
- developing and evaluating alternatives not previously given serious considera-tion;
- supplementing, improving, or modifying analyses;
- making factual corrections; or
- explaining why the comments do not warrant further agency response, citing the sources, authorities, or reasons which support that position and, if possible, indicating those circumstances which would trigger reappraisal or further response.

Chapter 19 discusses the requirements for public hearings, public information meetings, and responding to comments received during the public hearing.

Also see Section 25-2 (Activities 18 and 19).

PROJECT ACTIVITY (Phase I)

Activity Title: Select Preferred Alignment

Activity No.: 40

Responsible Unit: Project Study Group

Activity Description:

Based on the results of the public hearing, circulation of documents, and written and verbal comments received, the project study group will select the preferred alignment within the corridor. This may require additional analyses to resolve issues and questions raised during the Public Hearing. The selected preferred alignment will be used to prepare the final Design Report (Activity 43) and, consequently, for the detailed Phase II design.

PROJECT ACTIVITY (Phase I)

Activity Title: Initiate/Circulate Final EIS (FEIS)

Activity No.: 41

Responsible Unit: Environmental Unit

Activity Description:

The actions described in Section 25-2 (Activities 20 and 21) will apply to the preparation and processing of the Final EIS for approval.

The district Environmental Unit has the primary responsibility for circulating the FEIS which, basically, will be distributed to any entity which made substantive comments on the Draft EIS or requested a copy of the FEIS. Section 25-1.03(b) discusses IDOT specific information for circulating the FEIS in detail. Section 25-2 (Activity 22) describes the procedures for processing the FEIS by FHWA and USEPA.

PROJECT ACTIVITY (Phase I)

Activity Title: Obtain Record of Decision

Activity No.: 42

Responsible Unit: Environmental Unit

Activity Description:

The actions described in Section 25-2 (Activities 23 and 24) will apply to the preparation and processing of the Record of Decision. The FEIS will be incorporated or referenced in the final Design Report (Activity 43).

PROJECT ACTIVITY (Phase I)

Activity Title: Prepare Final Design Report

Activity No.: 43

Responsible Unit: Project Study Group

Activity Description:

The comments received from the public and other agencies should be analyzed to determine if any changes are necessary in the draft Design Report and if any relevant issues have been overlooked. If an oversight has occurred, additional studies may be required to explain the resultant effects and determine what project design changes, if any, are necessary. After the review and analysis of comments is complete and appropriate revisions effected, the final Design Report may be prepared. Activity 38 and Chapters 11 and 12 list the appropriate format, reports, and discussions that should be included in the Design Report. The final Design Report will also include or reference a copy of the FEIS received from the Environmental Unit.

After completing all public involvement and environmental requirements, the original scaled mapping is reduced for insertion into an appendix of the Design Report. Prepare the reduced mapping sheets and other engineering exhibits on 11 in x 17 in sheets and place them in an Appendix. In addition, place the aerial photography (access control plans) showing the alternatives advanced for environmental analysis and any other environmental exhibits on 11 in x 17 in sheets and place them in an Appendix. This Appendix can be used in conjunction with a draft and final EIS. Use the 11 in x 17 in format in all cases. This size format provides for ease of use of all final exhibits by Planning, Design, and Land Acquisition personnel.

PROJECT ACTIVITY (Phase I)

Activity Title: Obtain Design Approval From BDE

Activity No.: 44

Responsible Unit: BDE

Activity Description:

Before submitting the final Design Report to BDE for approval, ensure that the following has been completed:

- the corridor has been approved;
- the applicable requirements in Part II, Project Development, and Part III, Environmental Procedures, have been met;
- public involvement activities as described in Chapter 19 have been completed;
- the FEIS and Record of Decision have been approved by the appropriate agencies;
- if applicable, coordination with FHWA has been completed; and
- all design exceptions have been approved by BDE and, where necessary, FHWA.

Submit the following to BDE:

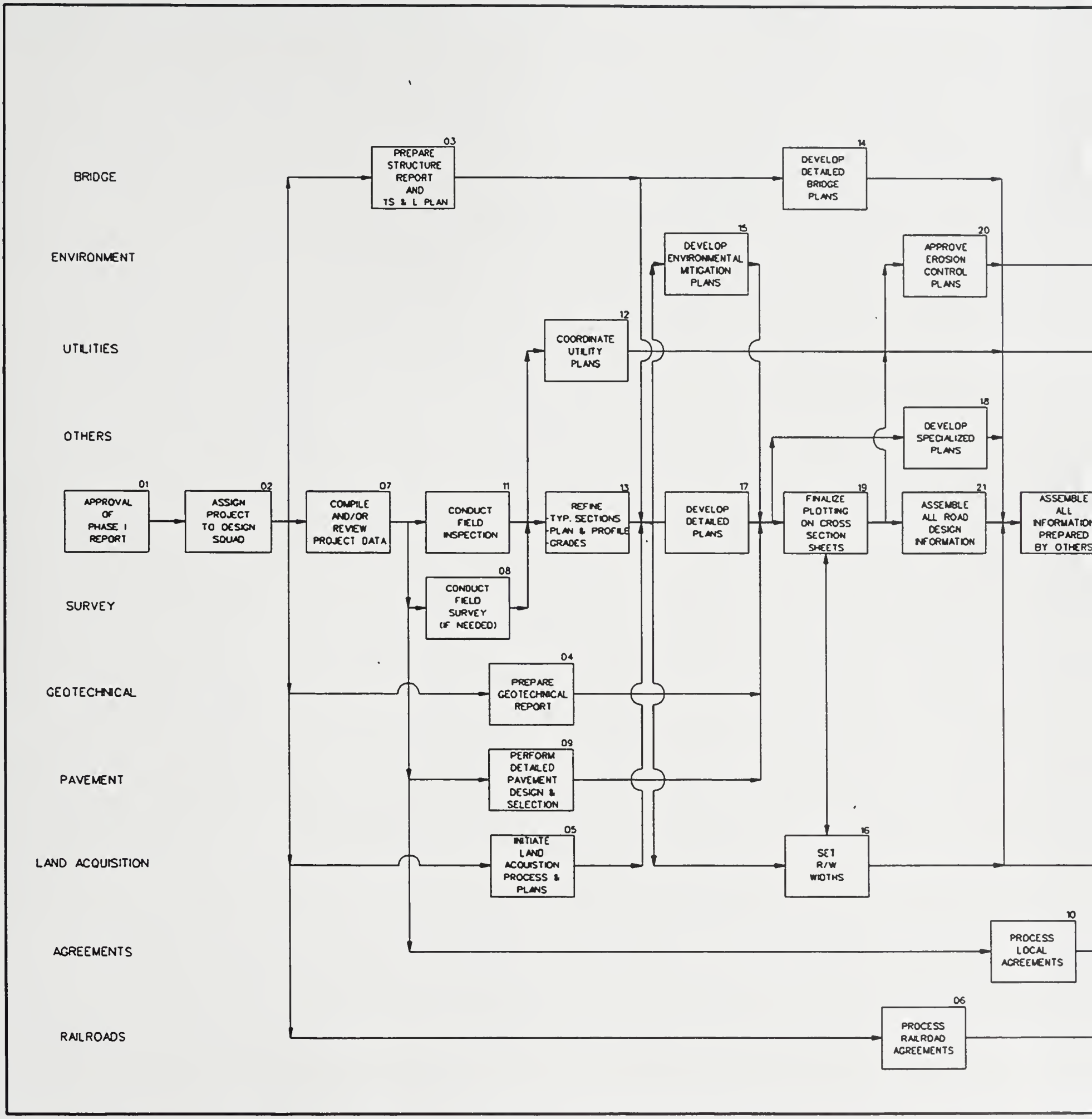
- two copies of the Design Report and Appendices,
- the applicable number of copies of the FEIS as discussed in Figure 25-2G,
- two copies of the Public Involvement Document,
- two copies of the Advisory Committee/Working Groups Document, and
- a memorandum describing the reasons for selecting the preferred alignment and design features, the items submitted, and the request for design approval.

The Bureau Chief of Design and Environment will grant the design approval with concurrence of the Director of the Division of Highways. The Secretary of IDOT and the Director of the Office of Planning and Programming will also be contacted on their desire for a briefing meeting before design approval will be granted. A typical design approval sign-off sheet is provided in Section 12-5.

2-3 PHASE II DESIGN

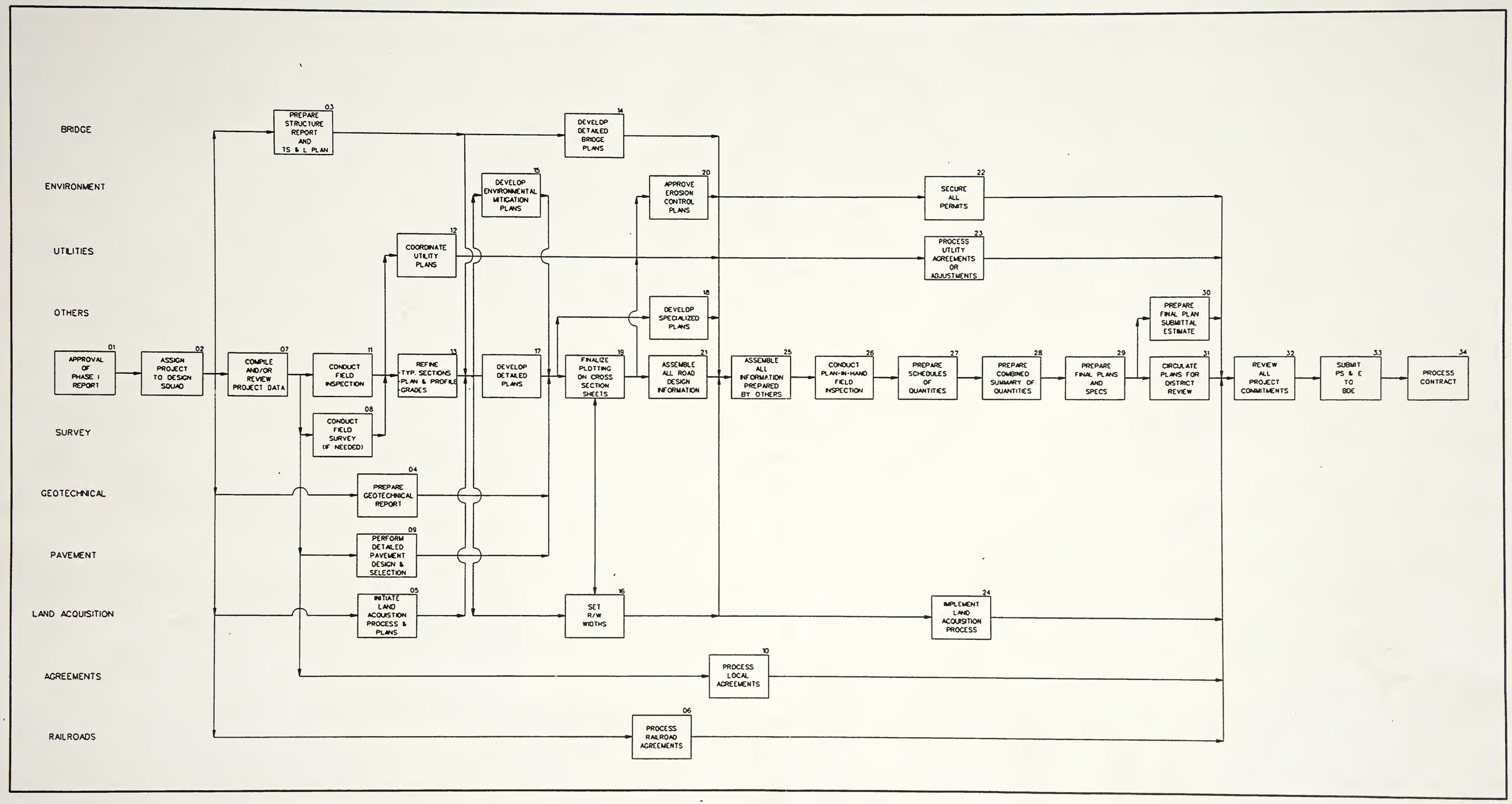
Figure 2-3A illustrates a typical Phase II flowchart or network for a major project on new alignment. Following Figure 2-3A are brief write-ups for each activity. For other project types, see the flowcharts in Chapter 3. Activities along the main axis are normally performed by the project design squad. The other lines of the chart represent activities performed by other units or groups.

While not shown in Figure 2-3A, Value Engineering (VE) will be an ongoing activity during the development of the final contract plans and specifications. The designer should review any VE studies conducted during Phase I and update them as necessary.



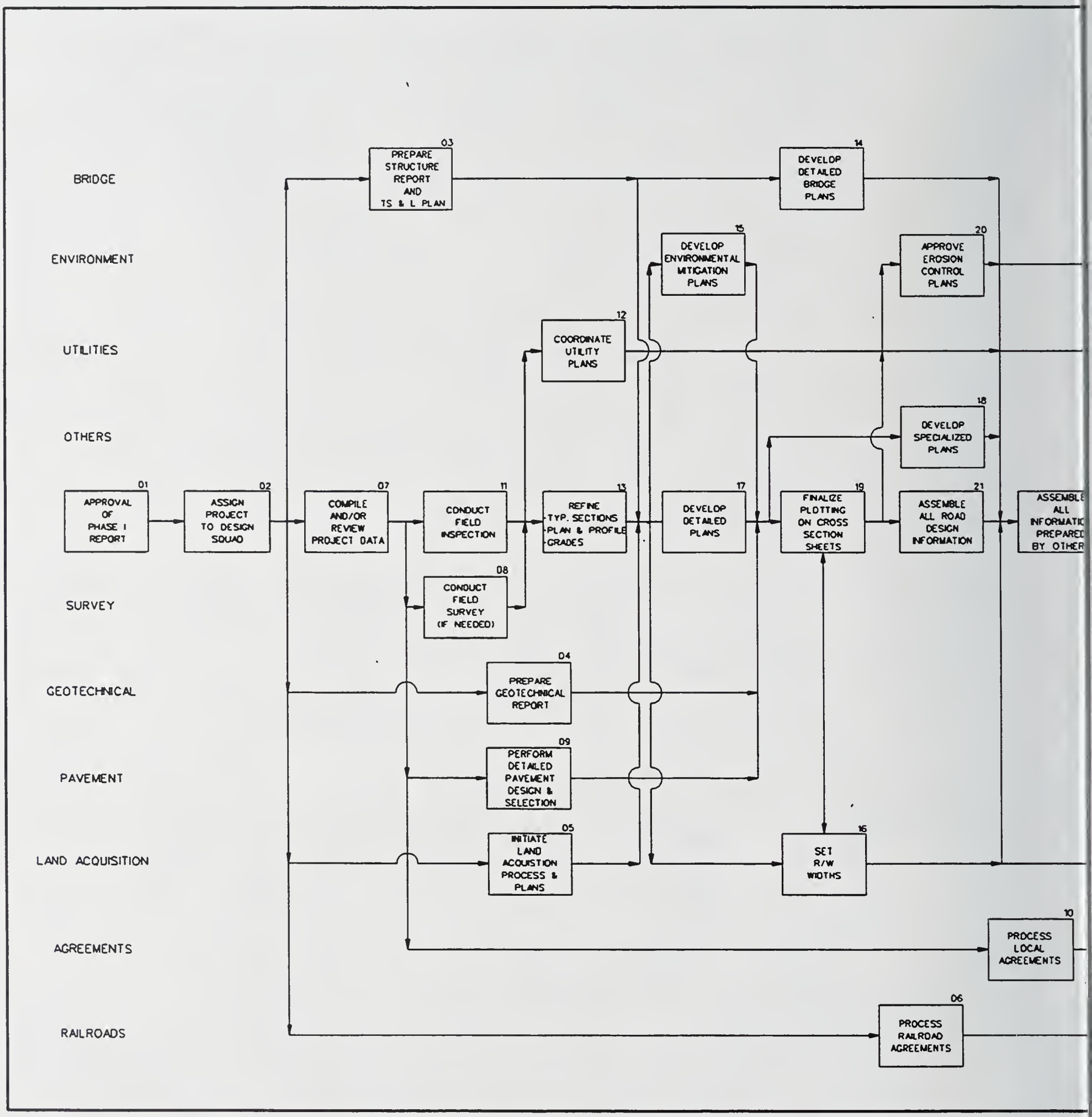
PHASE II PROJECT DEVE
(New Align

Figure 2



PHASE II PROJECT DEVELOPMENT NETWORK
(New Alignments)

Figure 2-3A



PHASE II PROJECT DEVE
(New Align

Figure 2

PROJECT ACTIVITY (Phase II)

Activity Title: Approval of Phase I Report

Activity No.: 01

Responsible Unit: BDE

Activity Description:

Once BDE has approved the Phase I report, this will signify that Phase I is complete and that Phase II can begin. See Figure 2-2A and the corresponding write-ups for Phase I work. For guidance on the approval of Phase I reports, see Section 12-5.

PROJECT ACTIVITY (Phase II)

Activity Title: Assign Project to Design Squad

Activity No.: 02

Responsible Unit: Studies and Plans Engineer

Activity Description:

This Activity begins Phase II of the project. At this point, the project will either be assigned to a design squad within the district Bureau of Program Development or to a consultant. The Studies and Plans Engineer will have the overall day-to-day responsibility for advancing the project through the Phase II project development process. He/she will:

- coordinate directly with other units or sections within the Department;
- attend all internal meetings and field inspections;
- be responsible for ensuring that the project meets all Department criteria and procedures;
- ensure the project is on schedule for the expected letting date;
- report directly to the Program Development Engineer on all significant project activities, problems, and developments; and
- participate in the public involvement process.

PROJECT ACTIVITY (Phase II)

Activity Title: Prepare Structures Report and TS&L Plans

Activity No.: 03

Responsible Unit: Bureau of Bridges and Structures/Design Squad

Activity Description:

Based on the approved Phase I report (Activity 01) and notification by the design squad that Phase II has begun (Activity 02), the district will prepare the Structures Report and the Bureau of Bridges and Structures will prepare the Type, Size, and Location (TS&L) Plans for any bridges within the project limits. TS&L Plans are detailed bridge configuration plans which are used to develop the detailed bridge construction plans. The TS&L Plans will present the following:

- plan and profile of the bridge showing the proposed type of superstructure and foundation, bridge end elevations, location of expansion and fixed ends, highway approaches, and existing contours at the bridge site;
- superstructure cross section showing pertinent structural details (e.g., number of beams, depth and width of bridge deck);
- bridge curb, sidewalk, and/or shoulders;
- design loadings, stresses, specifications, and other structural criteria;
- controlling horizontal and vertical clearances;
- hydraulic data, high and low water elevations, drift, ice, etc.; and
- a small scale location map to identify the location of the proposed bridge.

The Structures Report and TS&L Plans will be used in developing the detailed roadway plans (Activity 17). See Chapter 39 for more information on TS&L Plans and bridge sizing/geometrics.

For Phase II plans prepared by a Consultant, these activities may be the responsibility of the Consultant and approved by the Bureau of Bridges and Structures.

PROJECT ACTIVITY (Phase II)

Activity Title: Prepare Geotechnical Report

Activity No.: 04

Responsible Unit: Geotechnical Unit

Activity Description:

After being assigned the project (Activity 02), the design squad will request the Geotechnical Unit to investigate the geotechnical characteristics within the project limits based on the information provided in the approved Phase I report (Activity 01). The nature and depth of the investigation will be determined on a project-by-project basis. One of the primary factors which will determine the scope of the investigation will be the anticipated amount of earthwork for the project. The geotechnical investigation may include:

- an in-depth subsurface investigation (e.g., to determine the hydrogeologic characteristics of the subsurface);
- an evaluation of the potential for slides;
- an investigation of any wetlands in the vicinity of the project;
- for proposed cuts, a determination of the slope stability characteristics and the need for any special treatments (e.g., benching);
- testing of materials from the site by Department laboratory tests;
- an evaluation of any erosion potential within the project limits; and
- an evaluation of foundations for bridges and long culverts.

The Geotechnical Unit will prepare a Geotechnical Report documenting the findings from its investigation. The Report will be submitted to the design squad for input into the final typical section design for the facility.

PROJECT ACTIVITY (Phase II)

Activity Title: Initiate Land Acquisition Process and Plans

Activity No.: 05

Responsible Unit: Land Acquisition Section

Activity Description:

Based on the approved Phase I report (Activity 01) and notification by the design squad that Phase II has begun (Activity 02), the Land Acquisition Section will initiate the land acquisition process and the preparation of the right-of-way plans. This includes obtaining the existing right-of-way plans and researching the existing right-of-way status within the project limits, including:

- right-of-way titles and deeds,
- permanent easements,
- property lines and owners, and
- existing limits of access.

The preparation of right-of-way plans will include:

- setting up the sheets and stationing for the right-of-way plans,
- recording the section corner information,
- recording property ownership information,
- plotting the existing right-of-way, and
- developing parcel plats.

The Land Acquisition Section will forward this information to the design squad for use in preparation of the detailed roadway plans (Activity 17).

PROJECT ACTIVITY (Phase II)

Activity Title: Process Railroad Agreements

Activity No.: 06

Responsible Unit: Project Support Section

Activity Description:

The district provides information to BDE for the preparation and negotiation of formal agreements between the Department and the Railroad. This includes both railroad grade separation and at-grade crossing projects on the State highway system. Based on the approved Phase I report, the design squad should submit the necessary crossing data with sufficient lead time to allow for negotiations. Typically, a year or more is required.

The Agreement will cover:

- division of work and expense involved between IDOT and the Railroad for the crossing improvement;
- responsibilities for the future maintenance of the improvement;
- establishment of the Railroad's share of the cost as determined under the provisions of any one of the several classifications provided in the *Federal-Aid Policy Guide* and Section 7-1.02;
- reference to the acquisition of property rights (see Section 7-1.06);
- reimbursement of the costs incurred by the Railroad according to the requirements of the *Federal-Aid Policy Guide*;
- coverage of liability during construction operations; and
- reference to or identification of plans and plan approval.

The Project Support Section will coordinate the transfer of information and plans between the design squad and the railroad companies. This will be a continuous process as the design plans are developed during the Phase II design. This process should be completed prior to the review of all project commitments (Activity 32).

For additional guidance on coordinating with railroads, see Chapter 7.

PROJECT ACTIVITY (Phase II)

Activity Title: Compile and/or Review Project Data

Activity No.: 07

Responsible Unit: Design Squad

Activity Description:

The design squad may or may not include the same personnel as the project study group for Phase I. Also, there typically will be some delay between the Phase I and the Phase II portions of a project. Therefore, the design squad should review the Phase I report(s) and project files to become familiar with the decisions and determinations made during Phase I. Some of the information and decisions that should be reviewed may include:

- any design variances,
- alignment and typical section plans developed during Phase I,
- any technical reports prepared for the Phase I study,
- crash and traffic data,
- aerial photographs,
- the commitment file,
- the proposed TMA,
- documentation on public hearings and/or private meetings,
- letters of understanding and/or letters of intent sent to local officials,
- any utility involvement,
- any railroad involvement, and
- existing conditions to assess any changes in land use or development plans.

Based on this review, the design squad should evaluate what additional information and coordination with other units may be required to complete the project. The design squad also should ensure that other units as appropriate have initiated their work (e.g., Bureau of Bridges and Structures (Activity 03), Land Acquisition Section (Activity 05)). At this stage of the project, the design squad should request:

- if necessary, the Surveys and Photo Services Unit to conduct additional surveys (Activity 08);
- the Pavement Design Section to begin the pavement design and type selection (Activity 09); and
- the Project Support Section to begin processing any necessary local agency agreements (Activity 10).

PROJECT ACTIVITY (Phase II)

Activity Title: Conduct Field Survey (If Needed)

Activity No.: 08

Responsible Unit: Surveys and Photo Services Unit

Activity Description:

In general, a survey should have been conducted during the development of the Phase I study. However, based on the review of the project data (Activity 07), the design squad may conclude that additional surveys are required. The needed survey information may include:

- existing field conditions (topography, vegetation, existing structures and road design features, etc.);
- drainage features (bodies of water, open channels, channel slopes and cross sections, existing drainage appurtenances, etc.);
- existing field landmarks;
- existing utilities (above and below ground);
- existing right-of-way markers and property lines; and
- alignment and cross section of any existing roads and driveways.

PROJECT ACTIVITY (Phase II)

Activity Title: Perform Detailed Pavement Design and Selection

Activity No.: 09

Responsible Unit: Pavement Design Section

Activity Description:

Based on the information provided by the design squad (Activity 07) and Phase I report (i.e., Geotechnical Report), the Pavement Design Section will perform the detailed pavement design analysis. For new or full-depth reconstruction, the objectives of the analysis will be to:

- select the design methodology, pavement type, and design criteria (see Section 54-1.04);
- determine the overall pavement thickness and thicknesses of individual layers; and
- determine any special surfacing design features (e.g., high-stress intersections, subdrainage design, use of geotextiles).

The objective of Activity 09 is to develop and compare pavement design options. See Chapter 54 for additional guidance on pavement design and approval.

PROJECT ACTIVITY (Phase II)

Activity Title: Process Local Agreements

Activity No.: 10

Responsible Unit: Project Support Section

Activity Description:

The district Project Support Section is responsible for the preparation and negotiation of formal agreements between the Department and local governments. These agreements may cover:

- division of work and expense involved between IDOT and the local agency in connection with the improvement,
- responsibilities for the future maintenance of the improvement,
- reference to the acquisition of property rights,
- reimbursement of the costs incurred by the local agency,
- coverage of liability during construction operations, and
- reference to or identification of plans and plan approval.

The Project Support Section also will be responsible for coordinating the transfer of information and plans between the design squad and the local agency. This will be a continuous process throughout the design phase as the design plans are developed. The district Project Support Section also will coordinate with BDE for review and approval of any agreements. This process should be completed prior to the review of all project commitments (Activity 32).

For additional guidance on coordinating with local agencies, see Chapter 5.

PROJECT ACTIVITY (Phase II)

Activity Title: Conduct Field Inspection

Activity No.: 11

Responsible Unit: Design Squad

Activity Description:

After completing the in-house review of the Phase I report and other project data, the design squad should conduct a field inspection of the project. The objective is to review major design features and project-related issues and to identify any potential problems. The design squad will arrange the field inspection and invite, as appropriate, individuals from the following units to the field inspection:

- district Bureau of Project Implementation,
- BDE,
- Bureau of Bridges and Structures,
- district Environmental Unit,
- district Bureau of Operations,
- Land Acquisition Section,
- FHWA,
- local officials, and
- others as deemed appropriate.

The design squad will document the findings and decisions in the minutes of the field inspection.

PROJECT ACTIVITY (Phase II)

Activity Title: Coordinate Utility Plans

Activity No.: 12

Responsible Unit: Project Support Section

Activity Description:

After conducting the field inspection (Activity 11) and any additional field surveys (Activity 08), the design squad will forward the preliminary construction plans with any known utilities plotted to the district Project Support Section. The design squad will also notify the Project Support Section of any unique issues (e.g., environmental, commitments). The Project Support Section will coordinate the transfer of information and plans between the design squad and the utility companies. The utility companies will review IDOT's plans, plot their facilities if not already shown, and prepare the necessary utility adjustment/relocation plans. As the design squad refines the construction plans, this information will be submitted to the Project Support Section to be forwarded to the utility companies.

For guidance on preparing utility plans and coordinating with utility companies, see Chapter 6.

PROJECT ACTIVITY (Phase II)

Activity Title: Refine Typical Sections, Plan and Profiles, Grades

Activity No.: 13

Responsible Unit: Design Squad

Activity Description:

Based on the review of the plans (Activity 07), the field inspection (Activity 11), the field survey (Activity 08), the Phase I report, and the project's commitment file, the design squad will refine and/or prepare the project's:

- cover sheet;
- general notes sheet;
- typical sections;
- the plan and profile sheets;
- alignment, ties, and benchmark sheet, and
- construction limits.

Section 63-4 provides guidance on the information that should be included on these plan sheets.

PROJECT ACTIVITY (Phase II)

Activity Title: Develop Detailed Bridge Plans

Activity No.: 14

Responsible Unit: Bureau of Bridges and Structures

Activity Description:

Based on the Phase I report (Activity 01), the Structure Report and TS & L Plans (Activity 03), and other information provided by the design squad, the Bureau of Bridges and Structures will perform the detailed structural design for any bridges and/or major structures on the project. The basic objective of the detailed design phase is to perform the in-depth structural analyses which are necessary to prepare a set of construction plans for any structures. The structural analyses, as applicable, may include the:

- superstructure design (e.g., framing details, deck slab, camber diagram);
- substructure design (e.g., piers, abutments);
- foundation design;
- approach slab design; and
- bridge rail design.

Once the structural plan sheets are completed, the Bureau of Bridges and Structures will submit the full set of bridge plan sheets and the quantities, pay items, and specifications to the design squad for direct insertion into the final project plans. Activity 14 must be completed before the assembly of information prepared by others (Activity 25).

For Phase II plans prepared by a Consultant, these activities may be the responsibility of the Consultant and approved by the Bureau of Bridges and Structures.

PROJECT ACTIVITY (Phase II)

Activity Title: Develop Environmental Mitigation Plans

Activity No.: 15

Responsible Unit: Environmental Unit

Activity Description:

Based on the approved Phase I report (Activity 01) and the typical sections and plan and profiles sheets (Activity 13), the district Environmental Unit, in consultation with BDE, as appropriate, will prepare the environmental mitigation plans, quantities, and specifications for direct insertion into the final construction plans. This may include wetlands compensation plans, Special Provisions for management and monitoring of special wastes, purchase of replacement lands, memorandums of agreements, etc. The Environmental Unit will ensure that the commitments made in Phase I of the project are incorporated into the plans.

See Section 25-2 (Activity 25).

PROJECT ACTIVITY (Phase II)

Activity Title: Set Right-of-Way Widths

Activity No.: 16

Responsible Unit: Land Acquisition Section

Activity Description:

Based on the information gathered in developing the Right-of-Way Plan Sheets (Activity 05) and the submittal of the construction limits by the design squad (Activity 13), the Land Acquisition Section will determine the right-of-way widths for the project. The Land Acquisition Section will forward this information to the design squad, which will incorporate this information on the plan and profile sheets.

This information also will be used to initiate the land acquisition process (Activity 24).

PROJECT ACTIVITY (Phase II)

Activity Title: Develop Detailed Plans

Activity No.: 17

Responsible Unit: Design Squad

Activity Description:

Once the design squad has received the Structure Report and TS & L Plans from the Bureau of Bridges and Structures (Activity 03) and the right-of-way plans from the Land Acquisition Section(Activity 05), the design squad can prepare the detailed sheets which will be incorporated into the construction plans. This may include the following:

- stages of construction and traffic control sheets;
- drainage sheets, including special drainage details;
- intersection details;
- interchange details;
- pavement marking details;
- grading plans;
- transition details;
- proposed cross sections, not including pavement template;
- special bikeway and trails plans;
- signing plans, if not prepared by the Bureau of Operations;
- environmental mitigation plans, if not prepared by others;
- highway lighting plans, if not prepared by others; and
- any other special details.

Section 63-4 presents guidance on what information should be included on each detail or plan sheet.

In addition, the design squad will:

- determine the appropriate level of access control for the facility;
- determine the need for construction permits, permanent right-of-way easements, and/or temporary easements;
- perform the detailed drainage design;
- perform a roadside safety analysis; and
- incorporate any special experimental features into the plans.

PROJECT ACTIVITY (Phase II)

Activity Title: Develop Specialized Plans

Activity No.: 18

Responsible Unit: Various Units

Activity Description:

Based on the typical sections, plan and profile sheets (Activity 13) and detailed plan sheets (Activity 17), various other units within IDOT will prepare their applicable plan sheets, quantities, and special provisions. This may include:

- district Bureau of Operations preparing the landscaping details;
- district Bureau of Operations preparing the signing plans, if included within the project;
- district Bureau of Operations (or Bureau of Electrical Operations in District 1) preparing the traffic signal plans;
- Bureau of Operations, BDE, and design squad developing rest area plans (see Section 16-1);
- Bureau of Operations, BDE, Bureau of Bridges and Structures, Capital Development Board, and the design squad developing weigh stations and weigh-in-motion plans; and/or
- BDE (or Bureau of Electrical Operations in District 1) preparing the highway lighting plans.

In addition, the following units may review the detailed plans prepared by the design squad (Activity 17):

- district Bureau of Operations will review the pavement marking details and stage construction and traffic control plans.
- district Bureau of Project Implementation will review the stage construction and traffic control plans.
- district Hydraulics Section will review the drainage plans and special drainage detail sheets.
- BDE will review bikeway and trail plans.
- Environmental Unit will review the environmental mitigation plans, if prepared by the design squad.

PROJECT ACTIVITY (Phase II)

Activity Title: Finalize Plotting on Cross Sections

Activity No.: 19

Responsible Unit: Design Squad

Activity Description:

During Phase I, the cross sections may have been generated using GEOPAK to determine the earthwork quantities. Using the following information, update and plot the revised cross sections:

- the TS & L Plans from the Bureau of Bridges and Structures (Activity 03);
- the environmental mitigation plans from the Environmental Unit (Activity 15);
- information received from the Project Support Section on utility plans (Activity 12);
- the refined typical sections and plan and profile sheets (Activity 13);
- the detailed plans (Activity 17);
- the Geotechnical Report from the Geotechnical Section (Activity 04);
- the final pavement design from the Pavement Design Section (Activity 09); and
- right-of-way information provided by the Land Acquisition Section (Activity 16).

Also during Activity 19, develop the erosion control plans and specifications according to the criteria in Chapter 59 and the information provided in the Phase I report. These plans and specifications will be submitted to the Environmental Unit for review and approval (Activity 20).

PROJECT ACTIVITY (Phase II)

Activity Title: Approve Erosion Control Plans

Activity No.: 20

Responsible Unit: Environmental Unit

Activity Description:

The Environmental Unit will review and approve the erosion control plans and specifications prepared by the design squad (Activity 19). Once approval has been granted, the erosion control plans will be incorporated into the construction plans (Activity 25). Also, once the erosion control plans have been approved, the Environmental Unit can initiate the process of securing the necessary project permits (Activity 22).

PROJECT ACTIVITY (Phase II)

Activity Title: Assemble All Road Design Information

Activity No.: 21

Responsible Unit: Design Squad

Activity Description:

Throughout the design process, the design squad will have prepared the various plan sheets separately. In Activity 21, conduct the following:

- plot a complete set of plans developed to date (e.g., cover sheet, typical plans, plan and profile sheets, detail plans, cross sections);
- assemble the sheets in the recommended order as noted in Chapter 63;
- review the plans and details to ensure that all necessary information has been included and that the plans and details are compatible with each other;
- calculate the quantities for roadway design elements according to the criteria in Chapter 64 of the *BDE Manual*, the *Coded Pay Items*, and the *Standard Specifications for Road and Bridge Construction* for pay items, units of measurement, rounding conventions, etc.; and
- prepare all required special provisions.

At this time the Schedules of Quantities and the Summary of Quantities will not yet be prepared. For assembly purposes, blank Schedule of Quantities and Summary of Quantities may be included.

PROJECT ACTIVITY (Phase II)

Activity Title: Secure All Permits

Activity No.: 22

Responsible Unit: Environmental Unit

Activity Description:

After the cross sections have been finalized, the erosion control plans have been completed (Activity 19) and approved (Activity 20), the typical sections and plan and profiles sheets have been completed (Activity 13), and the detailed bridge plans have been completed (Activity 14), the Environmental Unit will ensure all applicable permits and approvals required by the project are obtained. Depending upon the project-specific impacts, this may include any or all of the following:

- Section 401 water quality certification and 402 permits from the Illinois Environmental Protection Agency;
- US Army Corps of Engineers, Section 404/Section 10 permit(s);
- US Coast Guard, Section 9 permit; and
- permits issued by Illinois State agencies.

All permits, certifications, and approvals should be received by the Department prior to the review of all project commitments (Activity 32).

Chapter 28 provides a brief description of all Federal and State environmental permits and certifications.

PROJECT ACTIVITY (Phase II)

Activity Title: Process Utility Agreements or Adjustments

Activity No.: 23

Responsible Unit: Project Support Section

Activity Description:

Based on the roadway plans (Activities 13, 17, and 19), the detailed bridge plans (Activity 14), and the initial utility plans (Activity 12), the Project Support Section will work with the impacted utility companies and municipalities to implement the utility process. This process may include the following:

1. Plan Preparation. The utility companies are responsible for preparing all utility adjustment/relocation plans. The plans will be developed according to the criteria in Chapter 6.

2. Funding. Depending on the right-of-way ownership for existing and proposed utility locations, transportation funds may be eligible for utility adjustments/relocations required by the highway project; see Chapter 6. The Utilities pay for all betterments.

3. Agreements. The Project Support Section will prepare a Utility Agreement for each affected utility and will work with the utility companies to gain their input and approval. The Project Support Section will coordinate with BDE for review and approval of the agreements.

The Project Support Section will ensure that the utility process is completed before the review of all project commitments (Activity 32).

PROJECT ACTIVITY (Phase II)

Activity Title: Implement Land Acquisition Process

Activity No.: 24

Responsible Unit: Land Acquisition Section

Activity Description:

Based on the right-of-way plans (Activity 05), the final typical section and plan and profile sheets (Activity 13), and the right-of-way width determination (Activity 16), the Land Acquisition Section will implement the land acquisition procurement process. This will include the land acquisition functions of appraisal, negotiation, acquisition and, if necessary, condemnation. The Land Acquisition Section will also negotiate the terms of any construction permits, permanent easements, and/or temporary easements.

The Land Acquisition Section will ensure that the land acquisition procurement process is completed before the final review of all project commitments (Activity 32).

The Land Acquisition Section should coordinate with the design squad to ensure any negotiated considerations/commitments are included in the contract plans.

PROJECT ACTIVITY (Phase II)

Activity Title: Assemble All Information Prepared by Others

Activity No.: 25

Responsible Unit: Design Squad

Activity Description:

At this stage of project development, the design squad will have received the following completed plans, special provisions, pay items, and quantities from other IDOT units:

- the bridge/structure plans from the Bureau of Bridges and Structures (Activity 14);
- the landscaping details from the district Bureau of Operations (Activity 18);
- if included in the project, the signing plans from the district Bureau of Operations (Activity 18);
- the traffic signal plans from the district Bureau of Operations (or Bureau of Electrical Operations in District 1) (Activity 18);
- rest area plans from the Bureau of Operations and BDE (Activity 18);
- weigh stations and weigh-in-motion plans from the Bureau of Operations, BDE, Bureau of Bridges and Structures, and Capital Development Board (Activity 18); and
- the highway lighting plans from BDE (or Bureau of Electrical Operations in District 1) (Activity 18).

In addition, the design squad will have received approval of the erosion control plans from the Environmental Unit (Activity 20) and right-of-way widths from the Land Acquisition Section (Activity 16).

The design squad will review these materials 1) to identify and incorporate any information which must be incorporated directly into the detailed road design plans and 2) to assemble those plan sheets prepared by others into the overall set of construction plans.

PROJECT ACTIVITY (Phase II)

Activity Title: Conduct Plan-in-Hand Field Inspection

Activity No.: 26

Responsible Unit: Design Squad

Activity Description:

At this stage of project development, all major design work has been completed, including roadway design, traffic items, structural elements, erosion control plans, right-of-way design, etc. The design squad is responsible for scheduling the Plan-in-Hand (PIH) review of the project. The PIH review is an in-depth office and on-site review of all project elements to ensure that all details and commitments have been satisfactorily incorporated into the construction plans and specifications, and that the project is nearly ready to advance to construction.

As applicable, the design squad will invite the following to conduct an office and PIH field inspection:

- district Bureau of Project Implementation,
- BDE,
- district Bureau of Operations,
- Bureau of Bridges and Structures,
- FHWA,
- local officials, and
- others as deemed appropriate.

Once the PIH office and field inspection has been completed, the design squad will prepare the PIH minutes to document all significant decisions made during the PIH review. After approval by the Program Development Engineer, distribute the PIH minutes to:

- all applicable Bureau Chiefs;
- District Engineer;
- all parties involved in the field review;
- FHWA, if applicable; and
- any other individuals or sections as deemed appropriate.

All parties receiving a copy of the PIH minutes are requested to provide comments on the minutes. Concurrence of the minutes will be assumed if no comments are received by the specified date.

PROJECT ACTIVITY (Phase II)

Activity Title: Prepare Schedules of Quantities

Activity No.: 27

Responsible Unit: Design Squad

Activity Description:

Based on any modifications due to the Plan-in-Hand field inspection (Activity 26), the design squad will refine the project quantities for the roadway design items developed during Activity 21. Using these quantities and those provided by other IDOT units (Activity 25), the design squad will prepare the Schedule of Quantities sheets according to the criteria presented in Chapter 64. These quantities will be incorporated onto the Summary of Quantities Sheet (Activity 28).

PROJECT ACTIVITY (Phase II)

Activity Title: Prepare Combined Summary of Quantities

Activity No.: 28

Responsible Unit: Design Squad

Activity Description:

Using the quantities developed in Activity 21, refined in Activity 27, and those provided by other IDOT units (Activity 25), the design squad will prepare the Summary of Quantities sheets, which will summarize all pay items necessary to construct the improvement. It also should include the applicable construction and safety code items, pay item code numbers, units of measurement, total quantities, and quantity breakdown for each section. One or more summary sheets typically will be included in each set of plans. Do not show other data on the summary sheets (e.g., general notes). When preparing the Summary of Quantities sheets, it is important that all quantities be calculated and segregated accordingly prior to completing the Summary of Quantities.

The Design Squad should coordinate with the Project Support Section to ensure that the percentages and cost breakdown in the Summary of Quantities and the Local Agency agreements are identical.

For additional guidance on preparing the Summary of Quantities, see Section 63-4.

PROJECT ACTIVITY (Phase II)

Activity Title: Prepare Final Plans and Specifications

Activity No.: 29

Responsible Unit: Design Squad/Others

Activity Description:

Based on the Plan-in-Hand Review and minutes (Activity 26), all bureaus and sections responsible for their respective project plans will make all necessary plan and specifications revisions. This will produce the final set of project plans ready for construction. Specifically for the design squad, the design squad will be responsible for revising the roadway plans and specifications. Once completed, the plans will be distributed for district review (Activity 31) and will allow the District Estimating Engineer to prepare the Final Plan Submittal Estimate.

Complete quality control/quality assurance (QC/QA) prior to the plans being circulated for district review.

PROJECT ACTIVITY (Phase II)

Activity Title: Prepare Final Plan Submittal Estimate

Activity No.: 30

Responsible Unit: District Estimating Engineer

Activity Description:

Based on the information from the final plans and specifications (Activity 29), the District Estimating Engineer will prepare the final district cost estimate. This may be a new estimate or an update of an earlier cost estimate prepared during Phase I or a revised cost estimate prepared during Phase II. This estimate will be submitted to the BDE Project Management Unit, which will use it to develop the Engineer's Estimate.

Chapter 65 provides guidance on the preparation of project cost estimates.

PROJECT ACTIVITY (Phase II)

Activity Title: Circulate Plans for District Review

Activity No.: 31

Responsible Unit: Design Squad

Activity Description:

Once all revisions from the Plan-in-Hand Review and minutes have been made to the plans and specifications, the design squad will submit a completed set of construction plans to the district units involved with the project for final review and comment. Typically, this review will consist of:

- reviewing the plans to ensure the reviewer's comments from previous reviews have been incorporated;
- ensuring that the changes do not conflict with the bureau's commitments; and
- ensuring that the plans conform to the Department's design criteria.

If changes are requested at this point which are desirable, but not mandatory, the Studies and Plans Engineer will determine if they should be incorporated. This will depend on other factors which may preclude the changes from being added to the plans. If another bureau determines the changes still should be incorporated, an appeal can be made to the Program Development Engineer for their incorporation.

PROJECT ACTIVITY (Phase II)

Activity Title: Review all Project Commitments

Activity No.: 32

Responsible Unit: Design Squad

Activity Description:

At this point in project development, the project design is essentially complete. The design squad must ensure that the following elements have been completed and/or have been incorporated into the plans:

- all environmental permits have been secured (Activity 22);
- all utility agreements and adjustments have been processed and signed (Activity 23);
- the final district cost estimate has been completed (Activity 30);
- the land acquisition process has been completed (Activity 24);
- all local agreements and letters of understanding have been processed and signed (Activity 10);
- all railroad agreements have been processed and signed (Activity 06); and
- all commitments made during the project development, including those made during Phases I and II, have been incorporated.

The design squad must carefully review all minutes of meetings, transcripts of public hearings, and the project study files to ensure that all commitments have been incorporated. If there are any questions, the design squad should contact the preparer of the Phase I report or the Unit making the commitment during Phase II.

If it is discovered during the plan development that a change is required to the approved Phase I report or a commitment cannot be met, the design squad must immediately notify BDE and all other applicable units so that the appropriate action can be taken. Failure to provide the appropriate notification and review may result in project delay.

PROJECT ACTIVITY (Phase II)

Activity Title: Submit PS & E to BDE

Activity No.: 33

Responsible Unit: Design Squad

Activity Description:

Once the plans are complete and the design squad has ensured all commitments, agreements, permits, etc., are complete or have been incorporated, the design squad will submit the following items to the BDE Program Support Unit:

- the Certification Acceptance/Project Status Form, signed by the District Engineer;
- a cover sheet signed by the District Engineer indicating his/her approval of the plans;
- one complete set of full-size plans on reproducible paper, mylar, or vellum (see Chapter 63 for the Department's guidelines on preparing plan sheets);
- one copy of each special provision required for the project, including a copy of the electronic file in Microsoft Word format (see Section 66-1.04 for the procedures on developing special provisions);
- a completed Recurring Special Provision check sheet (see Chapter 66);
- the project quantities on Form BD-213 or BDE approved equal (see Chapter 64 for the procedures on determining plan quantities);
- the expected construction time for the project (see Section 66-2.03 for the Department's guidelines on determining the expected construction time); and
- copies or originals of all permits and agreements.

To place an improvement on any specific letting, it is imperative that the plans and supporting documents be submitted according to the schedules established in Section 66-2 which indicate the minimum number of weeks prior to the letting date for the submittal or completion of a particular phase of work.

PROJECT ACTIVITY (Phase II)

Activity Title: Process Contract

Activity No.: 34

Responsible Unit: BDE

Activity Description:

Once BDE has received the plans and other information from the district (Activity 33), it will conduct the following:

- prepare the Engineer's Estimate;
- verify that the plans are on the list of recommended projects;
- check the Certification Acceptance /Project Status Form;
- verify the project is programmed and the scope of work is correct;
- determine the final funding source;
- check all agreements to ensure they are consistent with the project;
- submit the plans, special provisions, quantities, etc., for review and comment;
- prepare the Transportation Bulletin and advertise the project;
- if necessary, submit the PS & E to FHWA for approval;
- prepare the contract proposal;
- submit the proposal and plans to bidders;
- implement the letting process;
- review all bids; and
- execute the contract.

For additional guidance on the contract process, see Chapter 66.

Chapter Three

PROJECT DEVELOPMENT NETWORK
(Existing Alignment)

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

Chapter Three
PROJECT DEVELOPMENT NETWORK
(Existing Alignment)

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CHAPTER THREE

PROJECT DEVELOPMENT NETWORK

(Existing Alignment)

Chapters 2 and 3 document the basic approach used by IDOT in its project development process. Chapter 2 presents Phase I and Phase II networks for projects on new alignment. Chapter 3 presents Phase I and Phase II networks for projects on existing alignment requiring major right-of-way acquisitions (e.g., converting a two-lane facility to an expressway), minor right-of-way acquisitions (e.g., 3R projects), and projects with no right-of-way acquisition (e.g., Interstate Resurfacing, SMART, 3P). Chapters 2 and 3 present networks that graphically illustrate the development of "typical" highway projects.

3-1 GENERAL

The flowcharts in this chapter present networks that graphically illustrate the general process for Phase I and Phase II for projects on existing alignments. Following each flowchart is a brief description of each activity within the network. When using these flowcharts, consider the following:

1. Precedence Activity Network. The networks or flowcharts are precedence activity networks. An "activity" occurs when a significant, discrete event occurs and/or when the responsibility for the project (activity) is transferred from one unit to another. The "precedence" nature of the network implies that an activity cannot occur until all activities preceding that one have been completed. However, the user must be aware that some flexibility is necessary to apply this network to project development, especially during Phase I. For example, identifying new information during the public involvement stage may require the project study group to return to a previous activity and gather additional data.

2. Project Application. These networks represent an approximate process for a relatively complicated project. Not every activity will be applicable to every project and not all activities are shown. However, the user should find that projects developed according to this process have fewer management problems.

   The illustrated network assumes a project designed in-house. The process for a consultant-designed project will be similar, except that communication lines exist between IDOT and the consultant for IDOT review and approval.

3. Lines of Communication. The rigid application of the network would lead to predetermined, precise points at which communication occurs between units. This is neither realistic nor desirable. Communication between units must be continuous. This will result in fewer problems and fewer "surprises" in project development.

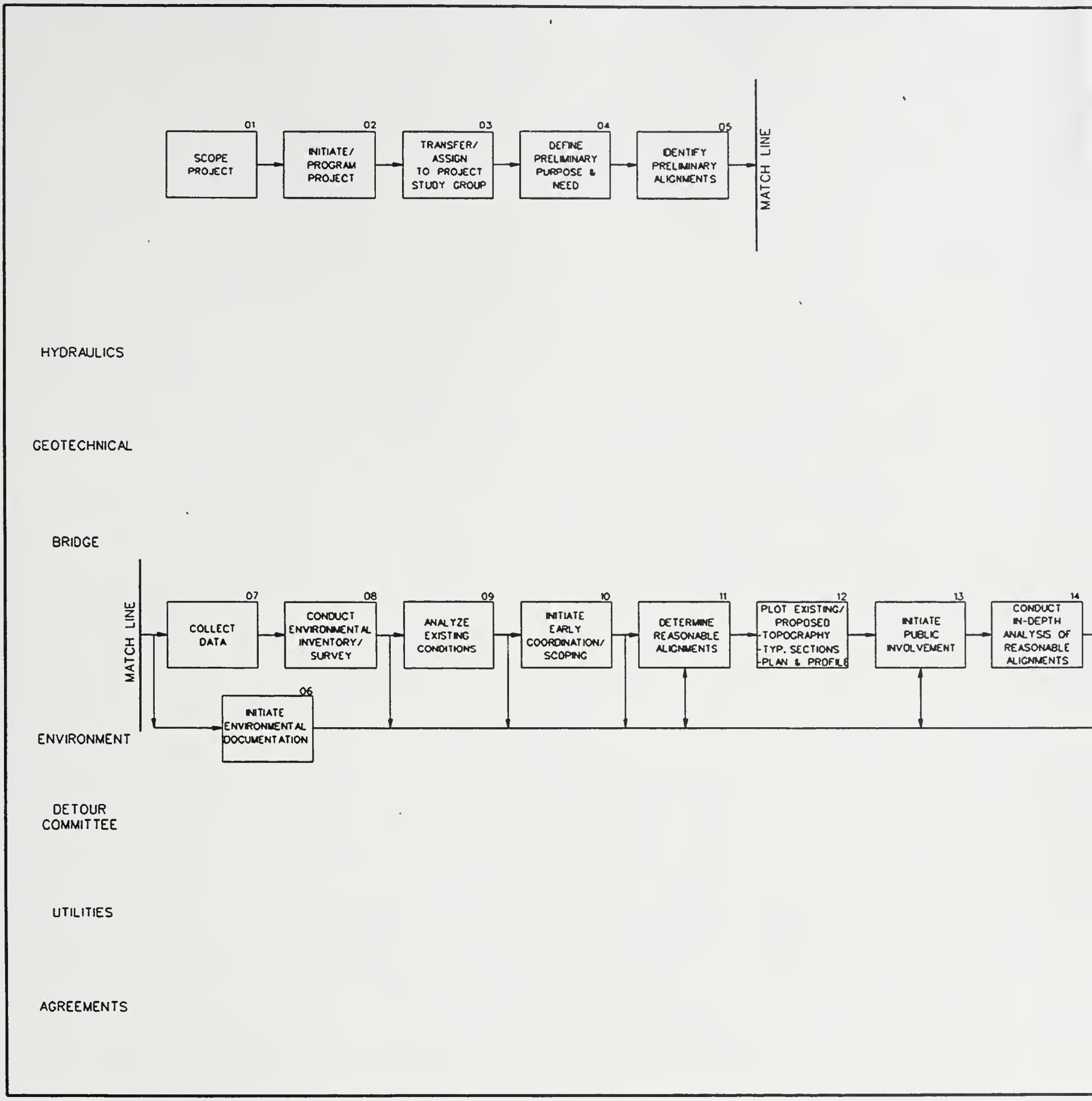
4. Value Engineering. Under 23 *CFR*, Part 627, FHWA requires that Value Engineering (VE) be applied to all projects on the National Highway System (NHS) which have an estimated cost of $25 million or more. The purpose is to improve project quality, reduce project costs, foster innovations, eliminate unnecessary and costly design elements, and to ensure efficient investment of scarce resources. VE should be an ongoing activity throughout the Phase I process and will require updating as the Phase I network is completed. Because of the ongoing nature, it has not been shown as an activity in Figure 3-2A, but must be considered where applicable.

5. Other Manual Chapters. The *BDE Manual* contains several other chapters that provide complementary information to Chapter 3. The designer should review these chapters for more information on the project development process. In particular, Chapter 3 should be used in combination with Chapter 4 "Project Coordination Responsibilities," Chapter 11 "Phase I Studies," Chapter 12 "Phase I Engineering Reports," Chapter 19 "Public Involvement Guidelines," and Part III, Environmental Procedures.

3-2 PROJECTS WITH MAJOR RIGHT-OF-WAY ACQUISITIONS

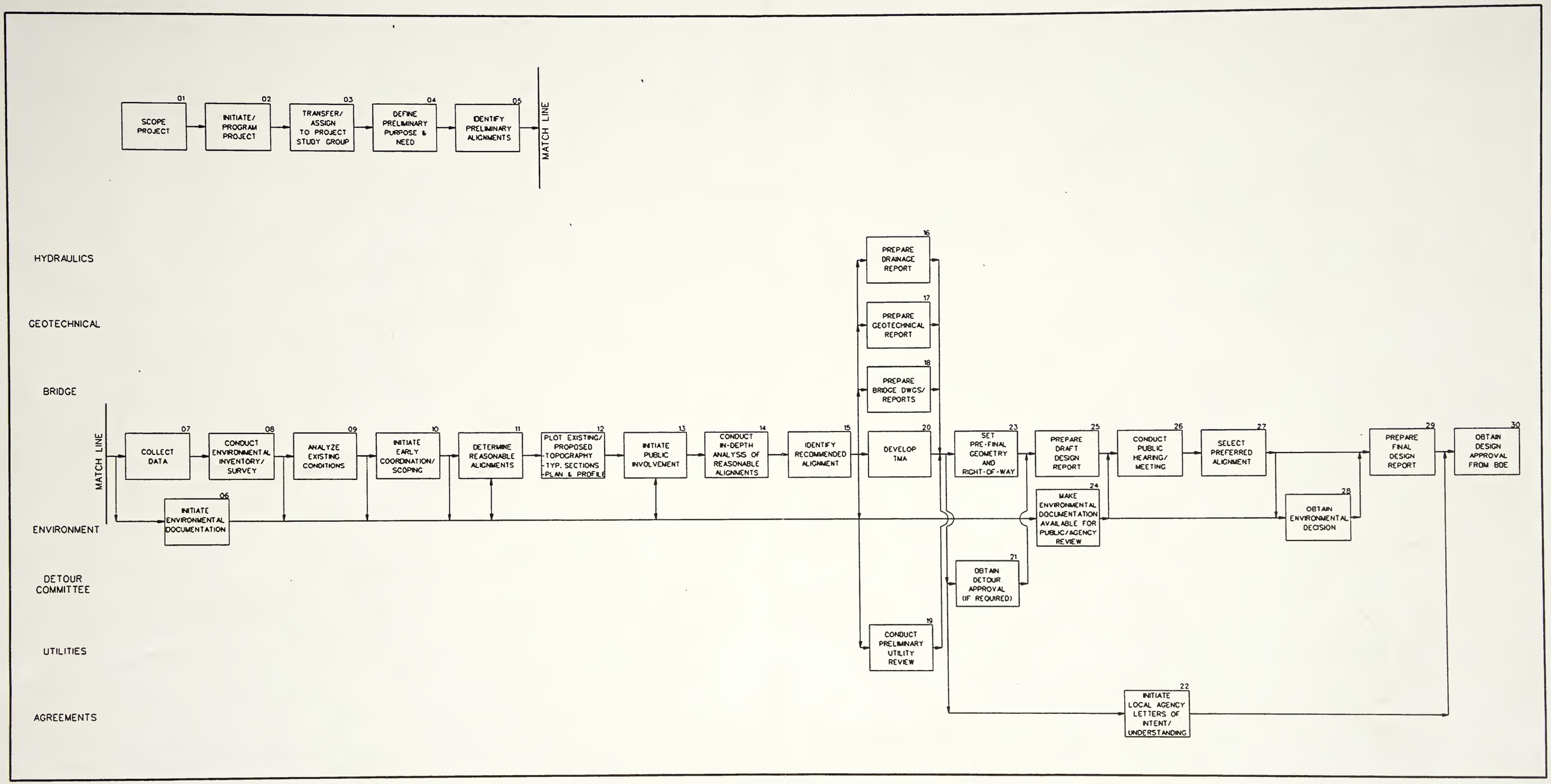
3-2.01 Phase I Studies

Figure 3-2A illustrates a typical Phase I flowchart or network for a major project on existing alignment that will require major ROW acquisitions and typically an Environmental Assessment. Those activities shown along the main axis of the chart present those items which are normally performed by the project study group. The other lines of the chart represent activities by other units or groups. These projects typically will require a Design Report, Combined Design Report, or a State Improvement Report. For guidance on the preparation and format of these reports, see Chapters 11 and 12. For other project types, see the flowcharts in Chapter 2, Section 3-3, and Section 3-4. Following Figure 3-2A are brief write-ups for each activity.



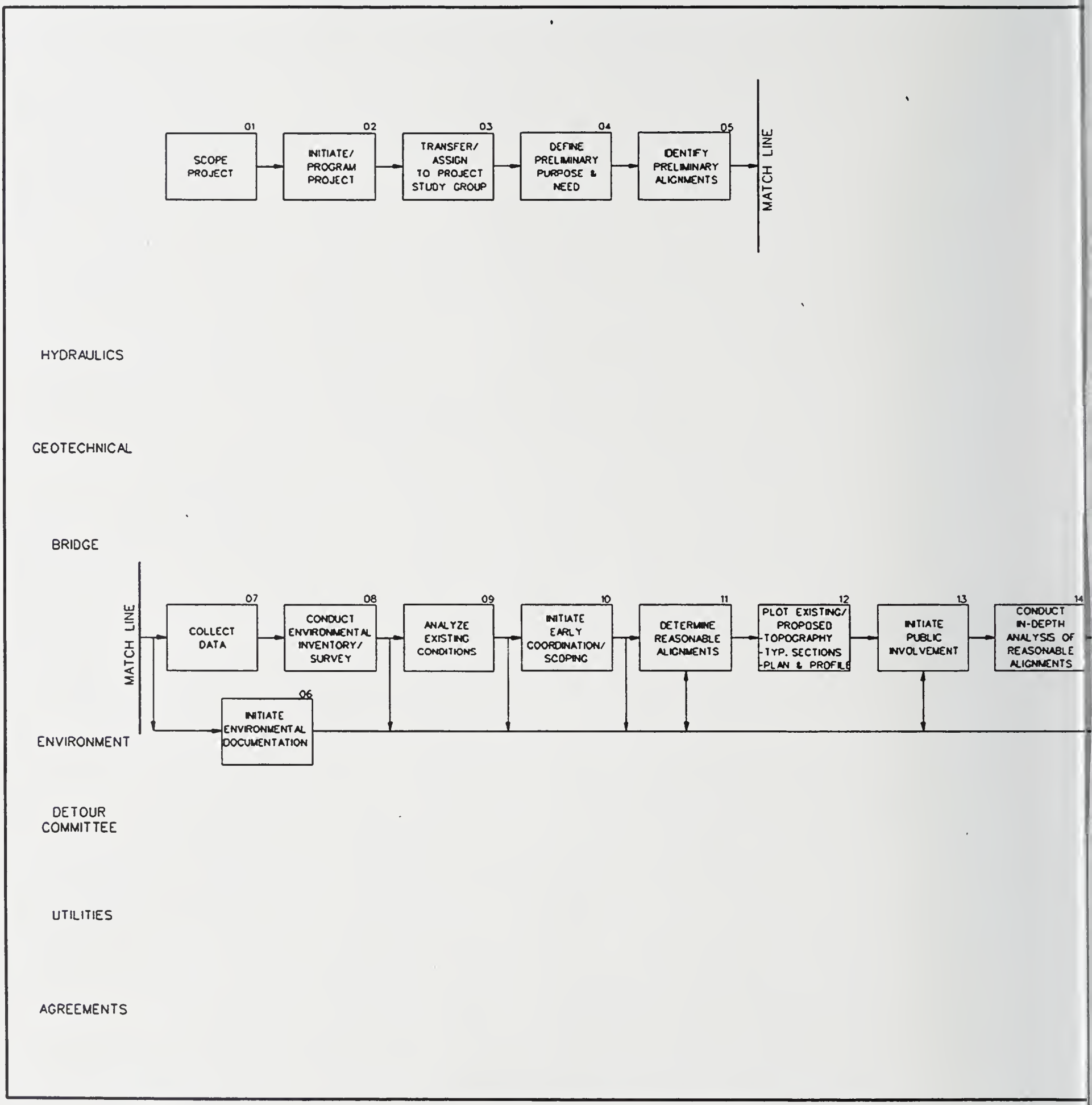
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PHASE I PROJECT DEVELOPMENT NETWORK
(Major Project on Existing Alignment)

Figure 3-2A



PHASE I PROJECT D
(Major Project c

Fig

PROJECT ACTIVITY (Phase I)

Activity Title: Scope Project

Activity No.: 01

Responsible Unit: District Bureau of Program Development

Activity Description:

A roadway project proposal can originate from a variety of sources, including local officials or metropolitan planning organizations (community-based need), directly from the IDOT district office (district-based need), from a Bureau in the central office (Office of Planning and Programming, BDE, Operations, etc.), and from systems such as the Safety Management System targeting a special need or a Statewide need.

Before a project is entered onto the Department's Proposed Highway Improvement Program, the district Programming Section initially develops and documents the project concept. Developing the project concept will typically involve the following:

- establishing that there is, in fact, a need for the project;
- making a preliminary determination of the project scope of work;
- reviewing any available data and records;
- reviewing existing plans;
- conducting an initial evaluation of right-of-way, utility, and environmental impacts and the likely level of environmental evaluation;
- developing a rough, preliminary cost estimate;
- determining a proposed alignment; and
- developing a set of review plans.

This information is forwarded for review and comment to Program Development, Operations, BDE, Environmental Unit, Bridges and Structures, and other individuals, as appropriate. Programming will refine the scope based on the comments received.

Once the scope, cost, and schedule have been defined, district Programming will forward this information to the Office of Planning and Programming for incorporation into the Department's multi-year program (Activity 02).

PROJECT ACTIVITY (Phase I)

Activity Title: Initiate/Program Project

Activity No.: 02

Responsible Unit: Office of Planning and Programming

Activity Description:

Candidate projects are submitted by the districts as a request for project programming to the Office of Planning and Programming. Based on a Statewide assessment of highway improvement needs and available funds, the Office of Planning and Programming will develop the Department's Proposed Highway Improvement Program. This will establish an individual project as an active project for further development.

The Office of Planning and Programming annually issues guidelines for multi-year programming criteria. This includes programming criteria for:

- improvement categories,
- pavement surface conditions,
- deficient bridges,
- safety improvements,
- Interstate rehabilitation,
- widening narrow and deteriorated pavements,
- improving intersections and reducing traffic bottlenecks,
- new construction/reconstruction of major facilities,
- transportation enhancement projects,
- Congestion Mitigation Air Quality (CMAQ) projects, and
- bicycle accommodation.

PROJECT ACTIVITY (Phase I)

Activity Title: Transfer/Assign to Project Study Group

Activity No.: 03

Responsible Unit: Studies and Plans Engineer

Activity Description:

At this point the project will either be assigned to a project study group within the district Bureau of Program Development or to a consultant to begin the design study. The Studies and Plans Engineer will have the overall day-to-day responsibility for advancing the project through the Phase I study process. He/she will:

- coordinate directly with other units within the Department;
- attend all internal meetings and field inspections;
- ensure that the project study meets all Department criteria and procedures;
- report directly to the District Program Development Engineer on all significant project activities, problems, and developments; and
- participate in the public involvement process.

The number and expertise of personnel initially assigned to the project study group will vary with the nature and scope of the proposed improvement. The personnel assigned will also vary over time relative to the priority for completion, the available lead time, and the activity in project development under study.

PROJECT ACTIVITY (Phase I)

Activity Title: Define Preliminary Purpose and Need

Activity No.: 04

Responsible Unit: Project Studies Group/BDE/FHWA/Office of Planning & Programming

Activity Description:

For a major transportation project, the project study group must first define the project purpose and need, which will direct the process for the identification of alternatives, in- depth analyses and, ultimately, selection of the preferred alternative. This will consist of reaffirming the need for the proposed improvement, establishing project goals and objectives, and establishing the study area and logical termini. The feasibility of an alignment depends on the social, economic, environmental, and engineering effects of the proposed highway improvement. Previous studies and decisions should be reaffirmed and/or updated as necessary. Other factors that must be considered include:

- adequacy of the existing highway network;
- existing traffic volumes and capacity deficiencies;
- crash information;
- alignment and profile deficiencies;
- structural integrity of existing pavements, bridges, and culverts;
- transportation demand;
- potential cost savings to the traveling public;
- enhanced economic development potential;
- improved access;
- programming guidelines;
- commitments to elected officials; and
- public input.

Further study may result in revisions to the preliminary purpose and need.

See Section 22-6.01 for more information on purpose and need.

PROJECT ACTIVITY (Phase I)

Activity Title: Identify Preliminary Alignments

Activity No.: 05

Responsible Unit: Project Study Group

Activity Description:

Based on the definition of the preliminary purpose and need (Activity 04) and the general design concept (Activity 01), the project study group should identify feasible alignments that could be used. Because this is an evolutionary process, the preliminary list will be narrowed during further evaluations. The evaluation of preliminary alternatives should be sensitive to those environmental resources for which the analysis of alternatives for avoidance and minimization of adverse impacts is required (e.g., wetlands, flood plains, Section 4(f) properties, and historic sites). All impractical alignments may be removed from the list with a brief description of why they were removed.

Using county maps, USGS quadrangle maps, and aerial photography, identify and lay out possible alignments on base maps (see Chapter 11). Also include the no-action alternative in the design study. General horizontal alignment should be determined for each alignment. The selection of the preliminary alignments will define what information will be collected in Activity 07 and the potential environmental impacts of the alignment will determine the type of environmental documentation that will be required on the project.

At this stage, request project mapping based on the identified alignments. However, note that many times insufficient information will be available at the time mapping is requested and, therefore, some judgment must be used in deciding the width limits of mapping. Additional mapping can be requested later during the design study if needed for further alignment investigations.

PROJECT ACTIVITY (Phase I)

Activity Title: Initiate Environmental Documentation

Activity No.: 06

Responsible Unit: Environmental Unit

Activity Description:

Once the preliminary alignments have been identified (Activity 05), the district Environmental Unit will initiate the environmental process. Depending on the project impact, this may involve either a:

- Categorical Exclusion (see Chapter 23),
- Environmental Assessment (see Chapter 24), or
- Environmental Impact Statement (see Chapter 25).

This Activity will include:

- discussing the project at the coordination meeting, which should include obtaining FHWA concurrence in the type of environmental processing;
- assembling and analyzing the necessary information (see Part III, Environmental Procedures);
- evaluating alternatives; and
- preparing the preliminary draft of the environmental documentation.

PROJECT ACTIVITY (Phase I)

Activity Title: Collect Data

Activity No.: 07

Responsible Unit: Project Study Group

Activity Description:

Once the preliminary alignments have been identified (Activity 05), the project study group must gather and inventory information and data on each alignment. All types of data, including social, economic, environmental, and engineering, should be gathered simultaneously. The amount and type of information to be collected will vary with the nature and scope of the proposed improvement. Some of the information that is gathered includes:

- roadway, field, aerial, and stream surveys;
- existing roadway classifications and truck routes;
- existing as-built plans and maintenance records;
- existing on-street parking;
- crash rate maps and collision diagrams;
- pavement and bridge condition reports;
- existing ROW information and any encroachments;
- ADT traffic maps and DHVs for current and design year traffic (all affected routes);
- inventory of posted speed limits;
- detailed transportation maps and plans with all modes of travel included;
- utility installations and detailed maps from utility companies;
- hydraulics survey, drainage survey, sewer atlas, and flooding information tables;
- fire districts, mail and school bus routes, location of churches, drainage districts, historic sites, and field-tile maps;
- commercial, agricultural, industrial, recreational, historic, and residential land use;
- conservation areas, archaeological sites, wetlands, special waste sites, etc.;
- local, State, and Federal agency coordination needs;
- current topographic mapping and aerial photographic mosaics;
- geotechnical investigations;
- highway geometrics, development of access control plans, and right-of-way issues;
- joint development uses, scenic easements, and aesthetics of highway (see Chapter 33);
- estimate of cost (see Section 11-2.15) and road-user benefits (see Section 11-7.01); and
- maintenance agreements with locals.

See Chapters 11 and 12 for further guidance on the information that should be collected for a Phase I study.

PROJECT ACTIVITY (Phase I)

Activity Title: Conduct Environmental Inventory/Survey

Activity No.: 08

Responsible Unit: Project Study Group/Environmental Unit/BDE

Activity Description:

The project study group will request BDE to conduct an environmental inventory by submitting an environmental survey request and Special Waste Assessment Screen/Survey Request Form, as appropriate, to BDE. Based on the preliminary alignments identified in Activity 05, BDE's review will include evaluating environmental databases, discussing the project at a district coordination meeting, and conducting field checks, as necessary. If determined necessary, BDE will coordinate, as appropriate, with the responsible agencies and the project study group for the field survey(s). BDE will provide the results of the reconnaissance survey(s) and any related studies for resource delineation or evaluation to the district office.

After the inventory has been prepared, the project study group should perform a preliminary evaluation of the magnitude and importance of the potential environmental impacts precipitated by the proposed action. The project study group will consider the environmental resource information in further development of the project and, for resources within the project limits (e.g., wetlands, natural areas, archaeological and historical sites), the district will evaluate options for avoiding and minimizing the project's effects on the resources. This will assist in initiating the early coordination process (Activity 10) and establishing the significance of project impacts. When the district has determined the likely effects the project will have on resources, subject to requirements for Special Environmental Analyses (see Chapter 26), it shall notify BDE.

If adverse effects to environmental resources cannot be avoided, BDE will evaluate whether any further studies of the resources are necessary. If further studies are needed, BDE will advise the district and will initiate action to have the studies accomplished, considering program priority and project scheduling.

BDE will provide information to the district office regarding environmental study findings, results of coordination with outside agencies, and any recommendations for further coordination or action by the district office. This information will also be used by the Environmental Unit in preparing the environmental documentation.

For additional guidance, see Chapter 27 "Environmental Surveys."

PROJECT ACTIVITY (Phase I)

Activity Title: Analyze Existing Conditions

Activity No.: 09

Responsible Unit: Project Study Group

Activity Description:

Using county or other area maps, as-built plans, USGS quadrangle topographic maps, aerial and/or field surveys, previously prepared reports, data collected in Activity 07, and the environmental inventory/survey (Activity 08), the project study group will review and identify the following existing conditions:

- the locations of towns, streams, railroads, and other topographic features;
- condition of the existing highway network within the corridor;
- existing traffic and capacity deficiencies;
- pavement, bridge, and culvert structural integrity;
- crash information;
- alignment and profile deficiencies;
- existing lane and shoulder widths;
- existing ROW, ROW constraints, and encroachments;
- existing and planned land uses from local governments, MPOs, fire districts, schools, etc.;
- existing agreements with utilities, railroads, local agencies, etc;
- existing drainage patterns and drainage systems;
- sensitive noise receptors;
- wetlands, applicable 4(f), 6(f), and 106 sites, etc.;
- special waste sites; and
- tree and vegetation inventory.

Upon receipt of the topographic mapping, plot the property lines, property names, names of roads, and all other important cultural features. Make paper copies of the mapping sheets and tape together. This procedure allows the project study group to review long lengths of the alignment in one view and to see how lines may best fit together. Begin laying out all feasible alignments.

After an alignment is laid out, determine the State plane coordinates of all control points (POTs and PIs) from the project mapping. Input this information and the radii of horizontal curves into a computer file to mathematically describe each alternative. Once an alignment is mathematized and tied into digitized mapping files, the alignment can then be stationed from west to east or south to north and the information stored as a computer file for further design work.

Provide the results of this activity to the Environmental Unit for use in preparing the environmental documentation.

PROJECT ACTIVITY (Phase I)

Activity Title: Initiate Early Coordination/Scoping

Activity No.: 10

Responsible Unit: Project Study Group/BDE

Activity Description:

Coordination with other Department and governmental agencies, as appropriate, is an important aspect during the design study process. This coordination should begin as early as practical in project planning.

At this stage of the design study process, the project study group will initiate early coordination with other Department Units or Bureaus and governmental agencies (e.g., FHWA, Land Acquisition, Construction, Operations, Bridges and Structures, Utilities, environmental resource agencies) that have an interest in the project or have information or expertise concerning any issues the project may involve. The purpose of this coordination will be to assist in the identification of reasonable alignment alternatives and in gathering information to evaluate the social, economic, engineering, and environmental impacts of the proposed project and possible impact mitigation measures. This coordination should begin as early as practical. Early coordination will also identify the cooperating agencies.

Scoping is an early and open process for determining the scope of issues to be addressed in the design study and for identifying the significant issues related to the proposed improvement. Scoping is intended to focus the study effort on issues that are truly significant and avoid the collection of needless detailed information on insignificant issues. For these types of projects, a formal scoping process may or may not be necessary. This depends, in part, on the number and magnitude of issues potentially involved and the probability that the proposed improvement may involve significant issues.

Although scoping may be accomplished by a formal meeting, it is more frequently accomplished through less formal meetings and exchanges of written and verbal communications. Scoping is typically not an individual step but an ongoing process as part of the overall coordination and public involvement process.

The results of this activity should be forwarded to the Environmental Unit so that it can be incorporated into the environmental documentation.

PROJECT ACTIVITY (Phase I)

Activity Title: Determine Reasonable Alignments

Activity No.: 11

Responsible Unit: Project Study Group/Environmental Unit

Activity Description:

The project study group in conjunction with the Environmental Unit will review the alignments identified in Activity 05 and reduce the number of alternatives to a reasonable number that are representative of the spectrum of possible alternatives that satisfy the project purpose and need. This will typically be two or three alternatives, including the no-action alternative. An in-depth analysis will be conducted on each of the remaining alternatives (Activity 14).

The determination of the reasonable alignments for in-depth evaluation, which is an evolutionary process, may be summarized as follows:

- identify preliminary alignments (Activity 05);
- perform a rough evaluation of the potential impacts of these preliminary alignments on the inventory of the affected environment to identify, for example, "fatal" flaws;
- incorporate input from agencies and/or the public (Activities 07, 08, and 10) in the decision-making process;
- estimate the overall reasonableness of each alignment under consideration;
- ensure that each reasonable alignment can satisfy the project purpose and need (Activity 04);
- ensure location of connections can be adequately developed (e.g., interchanges, frontage roads; see Section 11-4.02(e)); and
- based on an appropriate level of re-evaluation and additional coordination, identify those selected reasonable alignments which are worthy of in-depth evaluation considering:
  - + the need to identify potential avoidance and minimization alternatives for environmental reasons;
  - + that the cost of the studies for each alignment should be commensurate with its probability of implementation;
  - + that, collectively, the selected alignment should cover the full spectrum of alternatives; and
  - + that, collectively, the selected alignment should gain public acceptance that no reasonable alternative has been omitted.

Document the reason(s) why an alignment has been discarded. Include this information in the final Design Report.

PROJECT ACTIVITY (Phase I)

Activity Title: Plot Existing/Proposed Topography, Typical Sections, Plan and Profile

Activity No.: 12

Responsible Unit: Project Study Group

Activity Description:

For each remaining alternative alignment identified in Activity 11, conduct the following:

- If not already done, plot the existing topography including property lines, property owner names, business names and type, names of roads, driveways/access roads, and all other important geographic and cultural features.
- Plot existing cross sections.
- Determine the proposed typical sections.
- Determine the detailed horizontal alignment, including radii, stationing, and State plane coordinates of all control points (e.g., POTs, PIs, PCs, PTs).
- Investigate alternative vertical profiles for each alignment. This may require designing two to three trial vertical profiles and performing several complete earthwork calculations; see Sections 11-2.05 and 11-5.04(d).
- Once the geometric elements have been set, determine the preliminary right-of-way limits for each alternative.
- Determine the rough quantities for each alternative and refine the cost estimate for each alternative. If no quantities are available, use a generalized cost (e.g., cost per mile (kilometer)); see Sections 12-4 and 65-1.02.

IDOT uses the computer software program GEOPAK for laying out alignments, profiles, cross section designs, quantity calculations, and for determining construction limits. GEOPAK also can be used to generate 3-D and perspective plots for any portion of the roadway. Use 3-D plots in the design process to assess potential safety problems and the aesthetics of each alternative.

PROJECT ACTIVITY (Phase I)

Activity Title: Initiate Public Involvement

Activity No.: 13

Responsible Unit: Project Study Group/Environmental Unit

Activity Description:

This Activity will allow the public an opportunity for input and comment on the alternatives selected in Activity 11. Typically, this will consist of informational letters, advertisements, and/or meetings with local government officials, fire districts, school districts, drainage districts, historic commissions, MPOs, residents, businesses, etc. These meetings or letters may include:

- advising local, State, and Federal officials that a project has been initiated and that a study is underway;
- procedures for developing possible coordination and public service involvement;
- a discussion on the project scope;
- a request for information (e.g., MPO plans, drainage problems, transit needs);
- a discussion with businesses, railroads, and utility companies; and
- talking with individuals at public information meetings about individual concerns.

Public coordination must be continuous throughout the project development. For guidance on public coordination, see Chapter 19.

PROJECT ACTIVITY (Phase I)

Activity Title: Conduct In-Depth Analysis of Reasonable Alignments

Activity No.: 14

Responsible Unit: Project Study Group

Activity Description:

During the initial development of alignment alternatives, some analyses will have been conducted as attempts to fit various options into the project location. After the reasonable alignments have been identified (Activity 11) and the information is plotted on the plan sheets (Activity 12), further analyses will be necessary to assess the capability of each alternative to accomplish the project goals cost effectively. Conduct an in-depth analysis of each of the proposed alignments considering the social, economic, environmental, and engineering factors discussed in Part II, Project Development, and Part III, Environmental Procedures.

The engineering and environmental analyses may include:

- intersection design studies,
- interchange type and design studies,
- capacity analysis,
- initial impact and mitigation alternatives,
- wetlands involvement,
- air and noise impacts,
- impacts on cultural resources,
- tree and vegetation evaluation,
- water quality and natural resources impacts, and
- soils evaluation.

After the results of these investigations have been analyzed, there may be legitimate reasons to eliminate one or more of the final alignment alternatives. Discuss the reason why these alignment(s) were not further considered in the Design Report. For instance, traffic estimates for the no-action alternative may overload existing routes creating unacceptable congestion, thereby eliminating this alternative.

The results of this and previous Activities will be submitted to the Hydraulics Unit, Geotechnical Unit, Bureau of Bridges and Structures, Environmental Unit, and Project Support Section to allow these Units to prepare their applicable reports for the Design Report.

PROJECT ACTIVITY (Phase I)

Activity Title: Identify Recommended Alignment

Activity No.: 15

Responsible Unit: Project Study Group

Activity Description:

After conducting the analysis of each reasonable alignment (Activity 14), considering the environmental, social, and economic impacts, engineering factors, and public input, the project study group will identify a recommended alignment through the corridor. If there are two or more alignments with essentially the same impact, the project study group still should select one recommended alignment. The final geometric and right-of-way design will be based on this recommended alignment. The selected alternative alignment and description of why it was selected should be forwarded to BDE for review and approval prior to beginning the preparation of the draft Design Report (Activity 25) and before it is presented at the Public Hearing/Meeting (Activity 26).

PROJECT ACTIVITY (Phase I)

Activity Title: Prepare Drainage Report

Activity No.: 16

Responsible Unit: Hydraulics Unit

Activity Description:

Based on the information provided from the project study group (Activity 15), the Hydraulics Unit will perform the hydrology/hydraulics analysis, including the following:

- culvert sizing,
- longitudinal encroachments,
- existing and proposed storm drainage facilities,
- stormwater management, and
- pump stations.

Based on its evaluation, the Hydraulics Unit will prepare a Drainage Report. The project study group will use this information in making the final alignment determinations. It will also incorporate the Drainage Report into the final Design Report. See Chapter 40 and the *IDOT Drainage Manual* for more information on Drainage Reports.

PROJECT ACTIVITY (Phase I)

Activity Title: Prepare Geotechnical Report

Activity No.: 17

Responsible Unit: Geotechnical Unit

Activity Description:

Based on the information provided from the project study group (Activity 15), the Geotechnical Unit will prepare the Geotechnical Report. The analyses may include:

- basic soil properties (e.g., AASHTO soils classification);
- shrink/swell factors;
- properties of subsurface strata;
- potential for slides;
- slope stability at proposed cuts; and
- the development of a boring plan for any proposed bridges (e.g., location, spacing, and depth).

Based on its evaluation, the Geotechnical Unit will prepare a Geotechnical Report. The project study group will use this information in making the final alignment determinations. In addition, the Geotechnical Report will be incorporated into the final Design Report. See the *IDOT Geotechnical Manual* for more information.

PROJECT ACTIVITY (Phase I)

Activity Title: Prepare Bridge Drawings/Reports

Activity No.: 18

Responsible Unit: Bureau of Bridges and Structures/Project Study Group

Activity Description:

Based on the information provided from the project study group (Activity 15), the Bureau of Bridges and Structures (BB&S) will prepare the Proposed Structure Sketch for major structures, which will illustrate:

- the type of structures,
- approximate horizontal and vertical alignment and skew,
- approximate pier locations, and
- typical bridge deck section.

The project study group will prepare this sketch for other than major structures.

In addition, prepare the Bridge Condition Report for existing bridges which will include:

- a description of the physical conditions and deficiencies that mandate repair or replacement,
- a verification of the apparent soundness of any structure elements recommended for reuse plus the economic advantage gained by their reuse,
- a statement of any geometric or hydraulic improvement requirements, and
- a recommendation for the scope of the proposed work.

For additional information on the Proposed Structure Sketch and Bridge Condition Reports, see Chapter 39. The BB&S will also prepare the Hydraulics Report for major structures which will involve:

- the hydraulic analysis to determine the necessary dimensions of the waterway opening to pass the design flood, to meet the backwater allowances, and to satisfy any regulatory flood plain requirements;
- the hydraulic scour analysis to assist in determining the proper foundation design for the bridge; and
- a suggested freeboard elevation.

The project study group will prepare this report for other structures and the BB&S will approve the report.

The Structure Sketch and Hydraulics Report will be incorporated into the final Design Report.

PROJECT ACTIVITY (Phase I)

Activity Title: Conduct Preliminary Utility Review

Activity No.: 19

Responsible Unit: Project Support Section

Activity Description:

The project study group will provide the district Project Support Section with copies of the plan sheets for the recommended alignment. The Project Support Section will work with the applicable utility companies to identify project impacts on existing utilities and inform them of environmental issues which may affect their adjustments and relocations. The following items of work are typically performed:

1. Underground. The Project Support Section will coordinate with the district survey crew and will, if needed, request an underground survey to determine the depths and location of existing underground utilities within the project limits, especially fiber optic cables, water supply, and sanitary lines in urban areas.

2. Overhead. Any major above-ground utilities which may be impacted by the project. The Project Support Section may prepare a cost estimate to determine if a special effort should be exercised to avoid certain utilities.

3. Impacts. The Project Support Section will notify any utility companies which will be potentially impacted by the upcoming project, and the Section will request that the Utility contact IDOT if it plans any work in the vicinity of the project.

The Project Support Section will document its findings in a report or memorandum and submit it to the project study group. The project study group will use the information in making the final alignment determinations and document its findings in the Design Report.

For additional guidance on utility coordination, see Chapter 6.

PROJECT ACTIVITY (Phase I)

Activity Title: Develop Traffic Management Analysis

Activity No.: 20

Responsible Unit: Project Study Group

Activity Description:

The maintenance of traffic flow during construction of a State highway will involve traffic and worker safety, public relations, and capital costs to the Department. A well-planned method for maintaining traffic flow can minimize complaints from the traveling public and from residents and businesses along the affected route. Each construction site must be evaluated on its own merits as to the appropriate method for maintaining traffic. The Design Report should contain a Traffic Management Analysis (TMA) indicating an overall strategy for accommodating traffic during construction. Chapter 13 presents the goals and objectives for a TMA. The TMA should address the preferred traffic control method, alternative traffic control applications, geometric design criteria, the impact traffic will have on other facilities, local concerns, cost effectiveness of various alternatives, etc. Chapter 55 and the *Highway Standards* provide the design criteria to use when designing a traffic control plan. In addition, consider the following:

- The TMA not only must address the alternatives confined to the project site, but it must also evaluate the impact traffic will have on the entire corridor.
- For large projects, a TMA team may be organized during Phase I to study the traffic control alternatives and their effect on the corridor. Section 13-1.04(b) provides guidance on the makeup and responsibilities of the TMA team.
- If improvements are required to other facilities (e.g., widening of detour routes), it is important that these improvements be implemented as soon as practical prior to construction of the mainline facility. Allow local agencies sufficient opportunity to complete their improvements before construction on the State route begins. Agreements or concurrence may be necessary between the State and local agencies to determine cost sharing arrangements and/or approval of a local road as a detour route (Activity 22).
- No formal public involvement activity (e.g., design hearing) should occur until the recommended alternative in the TMA Report has been approved by BDE. However, informal public involvement will be necessary during the analysis of alternatives.

PROJECT ACTIVITY (Phase I)

Activity Title: Obtain Detour Approval (If Required)

Activity No.: 21

Responsible Unit: Detour Committee

Activity Description:

In general, the TMA (Activity 20) will be approved as part of the Design Report. Where there is a road closure with a marked detour, forward the TMA to BDE for review and approval from the Detour Committee. For an unmarked State highway road closure or for a road proposed to remain open by either stage construction or a runaround, the TMA will be approved by the appropriate BDE field engineer. For a closed unmarked State highway, also coordinate with the local county officials prior to the submittal of the Design Report.

PROJECT ACTIVITY (Phase I)

Activity Title: Initiate Local Agency Letters of Intent/Understanding

Activity No.: 22

Responsible Unit: Project Support Section

Activity Description:

Based on the public involvement (Activity 13), analyses conducted (Activity 14), the selection of the recommended alignment (Activity 15), and the proposed traffic control (Activity 20), the Project Support Section will initiate the preparation of any necessary letters of intent or letters of understanding with local officials. These may be prepared for:

- concurrence between the State and local agencies to determine cost sharing arrangements,
- approval of a local road as a detour route,
- determining maintenance responsibilities once the project is completed, and/or
- letters of support for the improvement.

For additional guidance, see Chapter 5.

PROJECT ACTIVITY (Phase I)

Activity Title: Set Pre-Final Geometry and Right-of-Way

Activity No.: 23

Responsible Unit: Project Study Group

Activity Description:

Based on the previous analyses for the recommended alignment (Activity 15) and information provided by others (Activities 16, 17, 18, and 19), the project study group will:

- make any necessary adjustments to the selected vertical and horizontal alignments;
- obtain BDE and FHWA, if applicable, approval for design exceptions;
- make any necessary adjustments to the typical sections;
- develop access control plans for freeways, expressways, and by-passes (see Section 11-5.04(f) and Chapter 35);
- set preliminary construction limits;
- set preliminary right-of-way limits;
- determine any easement requirements; and
- determine if any utility adjustments or displacements are necessary.

See Part IV, Roadway Design Elements, and Part V, Design of Highway Types, for detailed information on geometric design and the *IDOT Land Acquisition Manual* for guidance on right-of-way impacts.

PROJECT ACTIVITY (Phase I)

Activity Title: Make Environmental Documentation Available for Public/Agency Review

Activity No.: 24

Responsible Unit: Environmental Unit

Activity Description:

The applicable process presented in Chapters 23, 24, or 25, will apply to the preparation and processing of the environmental documentation for review.

PROJECT ACTIVITY (Phase I)

Activity Title: Prepare Draft Design Report

Activity No.: 25

Responsible Unit: Project Study Group

Activity Description:

Once the analyses have been conducted and the information gathered, the project study group will prepare the draft Design Report. Chapter 12 presents the format that should be used when preparing a Design Report. Because the design study should be essentially complete, it should be possible to prepare the draft Design Report in its near-final format. The discovery of new, significant information during the public hearing/meeting (Activity 26) should be rare if the design study has been properly developed. With the exception of changes necessary to reflect input from the public hearing/meeting (Activity 26), a final Design Report should only need information concerning the public involvement and the final conclusion/recommendation section.

In general, the draft Design Report should be submitted to BDE for review prior to its availability for public viewing and inspection at the public hearing/meeting. Formal approval by BDE for release is not normally issued. Copies made available to the public should be marked as "draft" or "preliminary."

The Design Report should include:

- a summary of purpose and need of the project;
- a list and results of prior studies;
- a list of all alternative alignments eliminated earlier and the reasons for their elimination;
- a summary of major design features and policies;
- a discussion on the compatibility of the alternatives with existing streets and highways;
- a summary of the environmental factors considered;
- a discussion on the advantages and disadvantages of the reasonable alignments studied in-depth;
- the results of public involvement;
- the proposed maintenance and protection of traffic plan;
- a list of commitments made to the public;
- the reasons and determination for selecting the preferred alignment;
- plan and profile of the preferred alignment;
- the estimate of costs for each alternative;
- exhibits showing typical sections, aerial photography, mapping, etc.;
- copies of analyses; and
- documentation for approval of other reports conducted during the design study.

For further guidance on information to be included in the Design Report, see Chapter 12.

PROJECT ACTIVITY (Phase I)

Activity Title: Conduct Public Hearing

Activity No.: 26

Responsible Unit: Project Study Group/Environmental Unit

Activity Description:

As required by the project, a public hearing or public meeting will be held at this stage of the design study to present to the public, and other interested organizations and agencies, the alignment alternative under consideration, a summary of the analyses for the various alternatives determined not to be feasible, and the criteria used to select the recommended alignment. Other Department Sections or Bureaus (e.g., Land Acquisition), as necessary, may attend the public hearing/meeting to answer specific questions relative to their expertise.

The project study group and the district Environmental Unit will evaluate all comments from the public hearing/meeting and will prepare responses to these comments as appropriate. Possible responses include:

- modifying alternatives including the proposed action;
- developing and evaluating alternatives not previously given serious considera-tion;
- supplementing, improving, or modifying analyses;
- making factual corrections; or
- explaining why the comments do not warrant further agency response, citing the sources, authorities, or reasons which support that position and, if possible, indicating those circumstances which would trigger reappraisal or further response.

Chapter 19 discusses the requirements for public hearings and public information meetings and for responding to comments received during the public hearing/meeting.

See the activity descriptions in Sections 23-3, 24-2, or 25-2, as appropriate, for additional information about public involvement in the environmental process.

PROJECT ACTIVITY (Phase I)

Activity Title: Select Preferred Alignment

Activity No.: 27

Responsible Unit: Project Study Group

Activity Description:

Based on the results of the public hearing/meeting, circulation of documents, and written and verbal comments received, the project study group will select the preferred alignment. This may require additional analyses to resolve issues and questions raised during the public hearing/meeting. The selected preferred alignment will be used to prepare the final Design Report (Activity 29) and, consequently, the detailed Phase II design.

PROJECT ACTIVITY (Phase I)

Activity Title: Obtain Environmental Decision

Activity No.: 28

Responsible Unit: Environmental Unit

Activity Description:

Based on the environmental document for the project (e.g., EIS, FONSI, CE) (Activity 06), the Environmental Unit will take the necessary actions to secure the final environmental decision. This will be one of the following:

1. CE Projects. The Environmental Unit must obtain approval of the CE from FHWA and/or BDE; see Chapter 23.

2. EA Projects. For an EA project which does not uncover any significant environmental impacts, the Environmental Unit must prepare and obtain approval of the Finding of No Significant Impact (FONSI); see Chapter 24.

3. EIS Projects. The Environmental Unit must obtain approval of the Record of Decision (ROD) from FHWA and/or BDE; see Chapter 25.

PROJECT ACTIVITY (Phase I)

Activity Title: Prepare Final Design Report

Activity No.: 29

Responsible Unit: Project Study Group

Activity Description:

The comments received from the public and other agencies should be analyzed to determine if any changes are necessary in the draft Design Report and if any relevant issues have been overlooked. If an oversight has occurred, additional studies may be required to explain the resultant effects and determine what project design changes, if any, are necessary. After the review and analysis of comments is complete and appropriate revisions made, the final Design Report may be prepared. Activity 25 and Chapters 11 and 12 list the appropriate format, reports, and discussions that should be included in the Design Report. The final Design Report will also include a copy or reference the final environmental documentation received from the Environmental Unit.

After completing all public involvement and environmental requirements, the original scaled mapping is reduced for insertion into an appendix of the Design Report. Prepare the reduced mapping sheets and other engineering exhibits on 11 in x 17 in sheets and place them in an appendix. In addition, place the aerial photography (access control plans) showing the alternatives advanced for environmental analysis and any other environmental exhibits on 11 in x 17 in sheets and place them in an appendix. The 11 in x 17 in format provides for ease of use of all final exhibits by Planning, Design, and Land Acquisition personnel.

PROJECT ACTIVITY (Phase I)

Activity Title: Obtain Design Approval From BDE

Activity No.: 30

Responsible Unit: BDE

Activity Description:

Before submitting the final Design Report to BDE for approval, ensure that the following has been completed:

- the alignment has been approved;
- the applicable requirements in Part II, Project Development, and Part III, Environmental Procedures, have been met;
- public involvement activities as described in Chapter 19 have been completed;
- the environmental documentation and environmental decision have been received with the appropriate approvals;
- if applicable, coordination with FHWA has been completed; and
- all design exceptions have been approved by BDE and, where necessary, FHWA.

Submit the following to BDE:

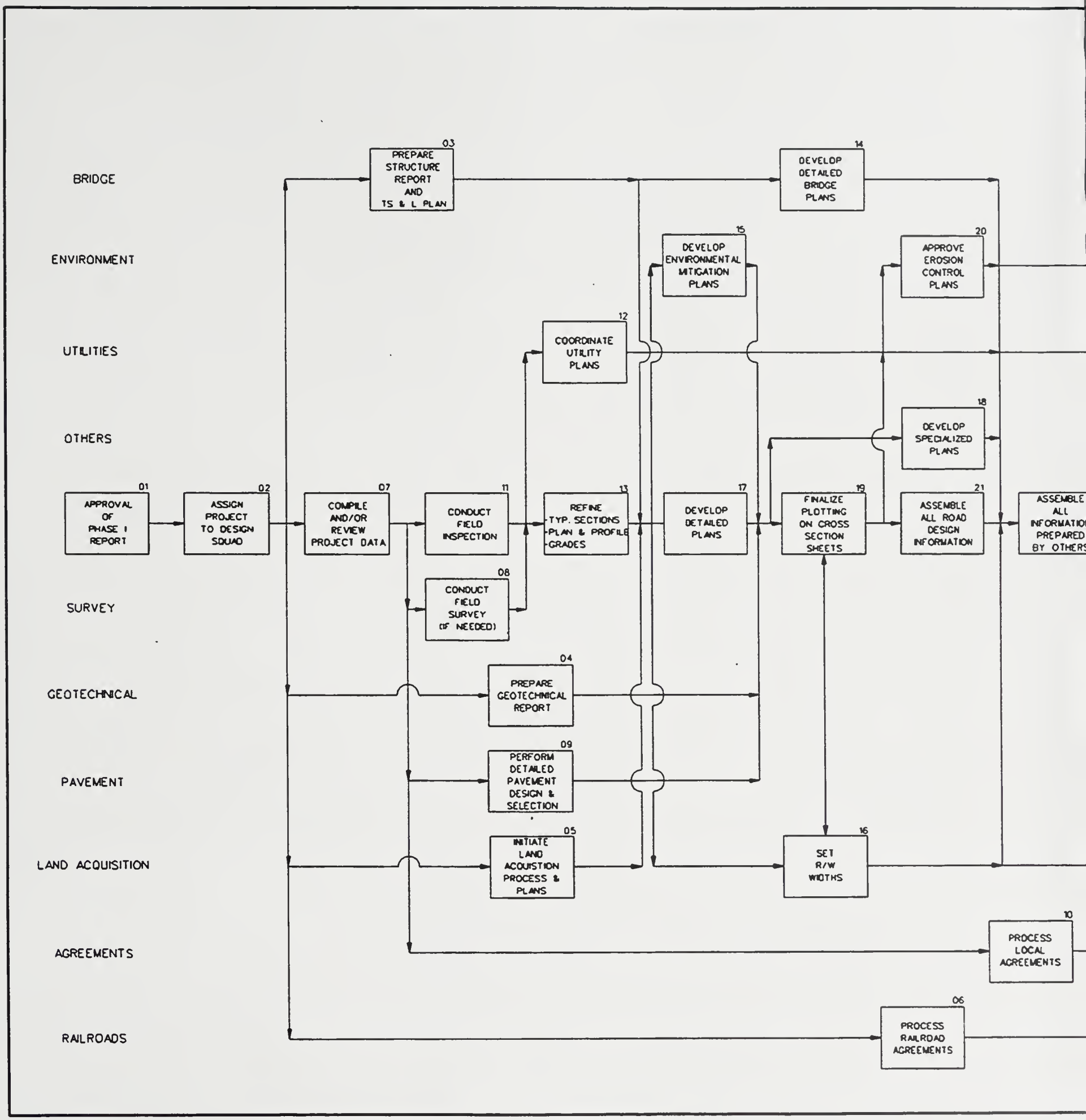
- two copies of the Design Report and Appendices,
- the applicable number of copies of the environmental documentation as discussed in Part III,
- two copies of the Public Involvement Document,
- two copies of the Advisory Committee/Working Groups Document, and
- a memorandum describing the reasons for selecting the preferred alignment and design features, the items submitted, and the request for design approval.

The Bureau Chief of Design and Environment will grant the design approval with concurrence of the Director of the Division of Highways. The Secretary of IDOT and the Director of the Office of Planning and Programming will also be contacted on their desire for a briefing meeting before design approval will be granted. A typical design approval sign-off sheet is provided in Section 12-5.

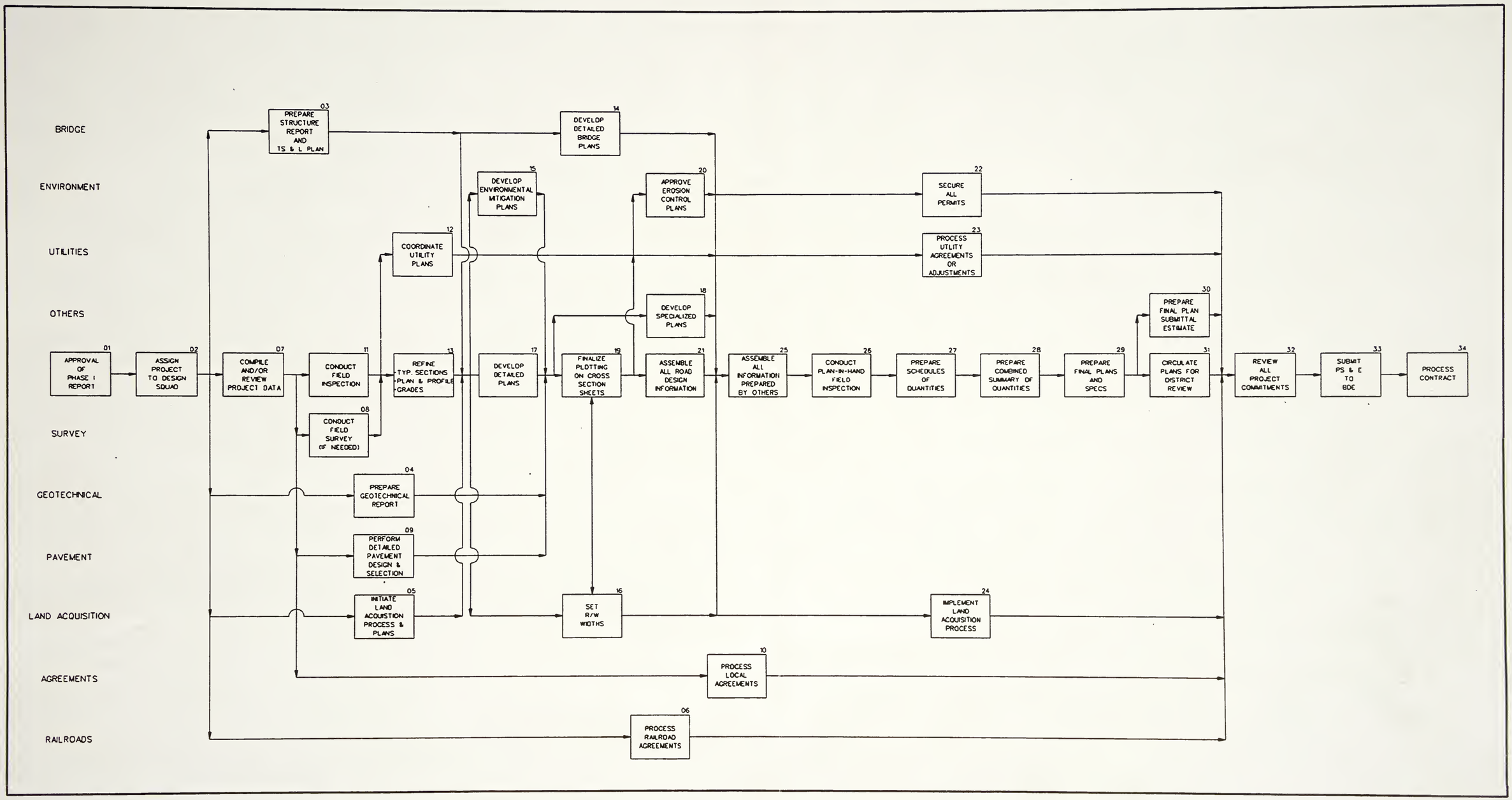
3-2.02 Phase II Design

Figure 3-2B illustrates a typical Phase II flowchart or network for a major project on existing alignment. Following Figure 3-2B are brief write-ups for each activity. For other project types, see the flowcharts in Chapter 2, Section 3-3, or Section 3-4. Activities along the main axis are normally performed by the design squad. The other lines of the chart represent activities by other units or groups.

While not shown in Figure 3-2B, Value Engineering (VE) will be an ongoing activity during the development of the final contract plans and specifications. The Designer should review any VE studies conducted during Phase I and update them as necessary.

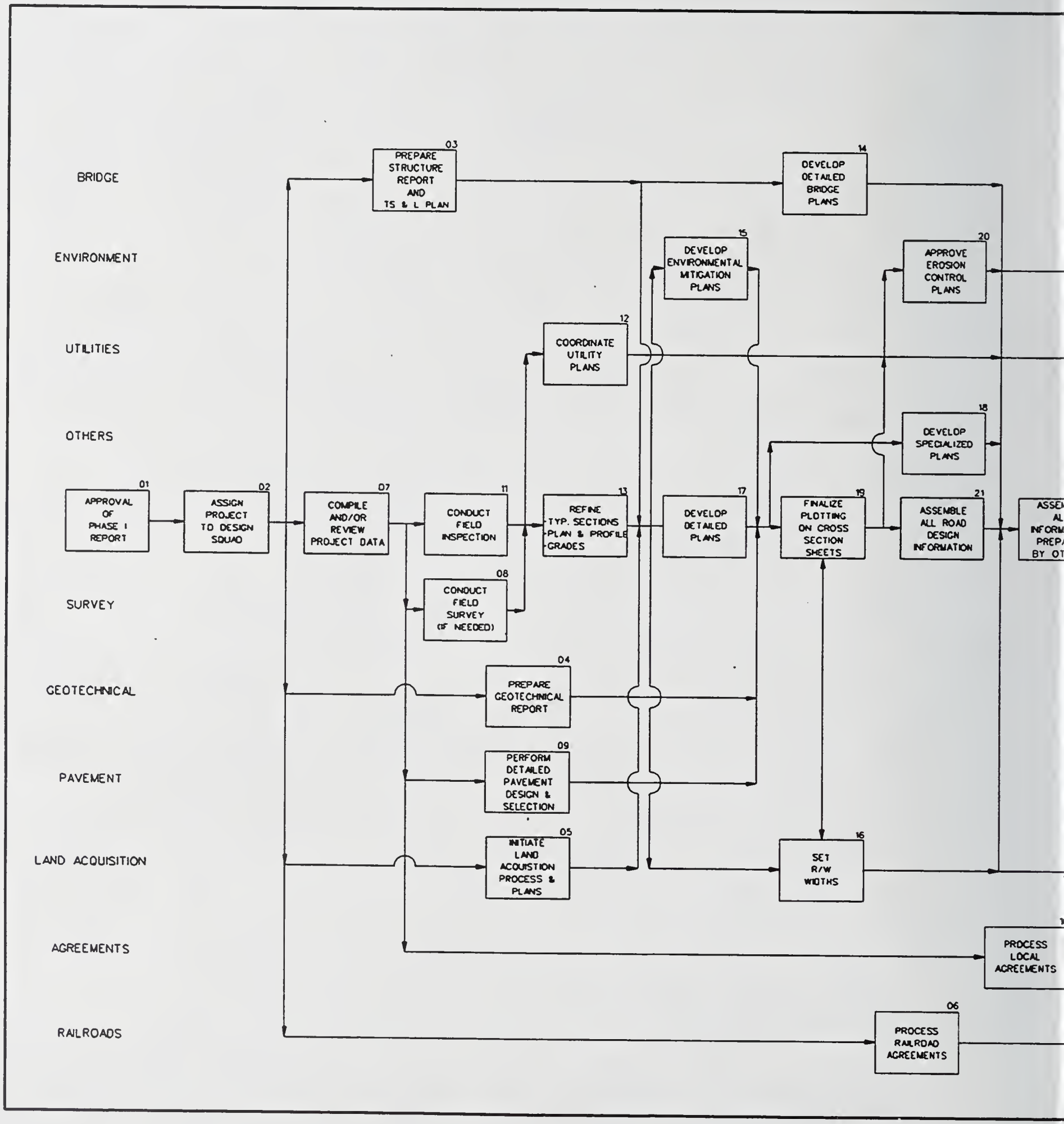


PHASE II PROJECT
(Major Project
F



PHASE II PROJECT DEVELOPMENT NETWORK
(Major Project on Existing Alignment)

Figure 3-2B



PHASE II PROJEC
(Major Projec

PROJECT ACTIVITY (Phase II)

Activity Title: Approval of Phase I Report

Activity No.: 01

Responsible Unit: BDE

Activity Description:

Once BDE has approved the Phase I report, this will signify that Phase I is complete and that Phase II can begin. See Figure 3-2A and the corresponding write-ups for Phase I work. For guidance on the approval of Phase I reports, see Section 12–5.

PROJECT ACTIVITY (Phase II)

Activity Title: Assign Project to Design Squad

Activity No.: 02

Responsible Unit: Studies and Plans Engineer

Activity Description:

This Activity begins Phase II of the project. At this point, the project will either be assigned to a design squad within the district Bureau of Program Development or to a consultant. The Studies and Plans Engineer will have the overall day-to-day responsibility for advancing the project through the Phase II project development process. He/she will:

- coordinate directly with other units or sections within the Department;
- attend all internal meetings and field inspections;
- be responsible for ensuring that the project meets all Department criteria and procedures;
- ensure the project is on schedule for the expected letting date;
- report directly to the Program Development Engineer on all significant project activities, problems, and developments; and
- participate in the public involvement process.

PROJECT ACTIVITY (Phase II)

Activity Title: Prepare Structures Report and TS&L Plans

Activity No.: 03

Responsible Unit: Bureau of Bridges and Structures/Design Squad

Activity Description:

Based on the approved Phase I report (Activity 01) and notification by the design squad that Phase II has begun (Activity 02), the district will prepare the Structures Report and the Bureau of Bridges and Structures will prepare the Type, Size, and Location (TS&L) Plans for any bridges within the project limits. TS&L Plans are detailed bridge configuration plans which are used to develop the detailed bridge construction plans. The TS&L Plans will present the following:

- plan and profile of the bridge showing the proposed type of superstructure and foundation, bridge end elevations, location of expansion and fixed ends, highway approaches, and existing contours at the bridge site;
- superstructure cross section showing pertinent structural details (e.g., number of beams, depth and width of bridge deck);
- bridge curb, sidewalk, and/or shoulders;
- design loadings, stresses, specifications, and other structural criteria;
- controlling horizontal and vertical clearances;
- hydraulic data, high and low water elevations, drift, ice, etc.; and
- a small scale location map to identify the location of the proposed bridge.

The Structures Report and TS&L Plans will be used in developing the detailed roadway plans (Activity 17). See Chapter 39 for more information on TS&L Plans and bridge sizing/geometrics.

For Phase II plans prepared by a Consultant, these activities may be the responsibility of the Consultant and approved by the Bureau of Bridges and Structures.

PROJECT ACTIVITY (Phase II)

Activity Title: Prepare Geotechnical Report

Activity No.: 04

Responsible Unit: Geotechnical Unit

Activity Description:

After being assigned the project (Activity 02), the design squad will request the Geotechnical Unit to investigate the geotechnical characteristics within the project limits based on the information provided in the approved Phase I report (Activity 01). The nature and depth of the investigation will be determined on a project-by-project basis. One of the primary factors which will determine the scope of the investigation will be the anticipated amount of earthwork for the project. The geotechnical investigation may include:

- an in-depth subsurface investigation (e.g., to determine the hydrogeologic characteristics of the subsurface);
- an evaluation of the potential for slides;
- an investigation of any wetlands in the vicinity of the project;
- for proposed cuts, a determination of the slope stability characteristics and the need for any special treatments (e.g., benching);
- testing of materials from the site by Department laboratory tests;
- an evaluation of any erosion potential within the project limits; and
- an evaluation of foundations for bridges and long culverts.

The Geotechnical Unit will prepare a Geotechnical Report documenting the findings from its investigation. The Report will be submitted to the design squad for input into the final typical section design for the facility.

PROJECT ACTIVITY (Phase II)

Activity Title: Initiate Land Acquisition Process and Plans

Activity No.: 05

Responsible Unit: Land Acquisition Section

Activity Description:

Based on the approved Phase I report (Activity 01) and notification by the design squad that Phase II has begun (Activity 02), the Land Acquisition Section will initiate the land acquisition process and the preparation of the right-of-way plans. This includes obtaining the existing right-of-way plans and researching the existing right-of-way status within the project limits, including:

- right-of-way titles and deeds,
- permanent easements,
- property lines and owners, and
- existing limits of access.

The preparation of right-of-way plans will include:

- setting up the sheets and stationing for the right-of-way plans,
- recording the section corner information,
- recording property ownership information,
- plotting the existing right-of-way, and
- developing parcel plats.

The Land Acquisition Section will forward this information to the design squad for use in preparation of the detailed roadway plans (Activity 17).

PROJECT ACTIVITY (Phase II)

Activity Title: Process Railroad Agreements

Activity No.: 06

Responsible Unit: Project Support Section

Activity Description:

The district provides information to BDE for the preparation and negotiation of formal agreements between the Department and the Railroad. This includes both railroad grade separation and at-grade crossing projects on the State highway system. Based on the approved Phase I report, the design squad should submit the necessary crossing data with sufficient lead time to allow for negotiations. Typically, a year or more is required.

The Agreement will cover:

- division of work and expense involved between IDOT and the Railroad for the crossing improvement;
- responsibilities for the future maintenance of the improvement;
- establishment of the Railroad's share of the cost as determined under the provisions of any one of the several classifications provided in the *Federal-Aid Policy Guide* and Section 7-1.02;
- reference to the acquisition of property rights (see Section 7-1.06);
- reimbursement of the costs incurred by the Railroad according to the requirements of the *Federal-Aid Policy Guide*;
- coverage of liability during construction operations; and
- reference to or identification of plans and plan approval.

The Project Support Section will coordinate the transfer of information and plans between the design squad and the railroad companies. This will be a continuous process as the design plans are developed during the Phase II design. This process should be completed prior to the review of all project commitments (Activity 32).

For additional guidance on coordinating with railroads, see Chapter 7.

PROJECT ACTIVITY (Phase II)

Activity Title: Compile and/or Review Project Data

Activity No.: 07

Responsible Unit: Design Squad

Activity Description:

The design squad may or may not include the same personnel as the project study group for Phase I. Also, there typically will be some delay between the Phase I and the Phase II portions of a project. Therefore, the design squad should review the Phase I report(s) and project files to become familiar with the decisions and determinations made during Phase I. Some of the information and decisions that should be reviewed may include:

- any design variances,
- alignment and typical section plans developed during Phase I,
- any technical reports prepared for the Phase I study,
- crash and traffic data,
- aerial photographs,
- the commitment file,
- the proposed TMA,
- documentation on public hearings and/or private meetings,
- letters of understanding and/or letters of intent sent to local officials,
- any utility involvement,
- any railroad involvement, and
- existing conditions to assess any changes in land use or development plans.

Based on this review, the design squad should evaluate what additional information and coordination with other units may be required to complete the project. The design squad also should ensure that other units as appropriate have initiated their work (e.g., Bureau of Bridges and Structures (Activity 03), Land Acquisition Section (Activity 05)). At this stage of the project, the design squad should request:

- if necessary, the Surveys and Photo Services Unit to conduct additional surveys (Activity 08);
- the Pavement Design Section to begin the pavement design and type selection (Activity 09); and
- the Project Support Section to begin processing any necessary local agency agreements (Activity 10).

PROJECT ACTIVITY (Phase II)

Activity Title: Conduct Field Survey (If Needed)

Activity No.: 08

Responsible Unit: Surveys and Photo Services Unit

Activity Description:

In general, a survey should have been conducted during the development of the Phase I study. However, based on the review of the project data (Activity 07), the design squad may conclude that additional surveys are required. The needed survey information may include:

- existing field conditions (topography, vegetation, existing structures and road design features, etc.);
- drainage features (bodies of water, open channels, channel slopes and cross sections, existing drainage appurtenances, etc.);
- existing field landmarks;
- existing utilities (above and below ground);
- existing right-of-way markers and property lines; and
- alignment and cross section of existing roads and driveways.

PROJECT ACTIVITY (Phase II)

Activity Title: Perform Detailed Pavement Design and Selection

Activity No.: 09

Responsible Unit: Pavement Design Section

Activity Description:

Based on the information provided by the design squad (Activity 07) and Phase I report (i.e., Geotechnical Report), the Pavement Design Section will perform the detailed pavement design analysis. For new or full-depth reconstruction, the objectives of the analysis will be to:

- select the design methodology, pavement type, and design criteria (see Section 54-1.04);
- determine the overall pavement thickness and thicknesses of individual layers; and
- determine any special surfacing design features (e.g., high-stress intersections, subdrainage design, use of geotextiles).

For existing pavements, the Pavement Design Section will develop a rehabilitation strategy. This may include, for example, determining pavement overlay thickness, patching needs, crack repair, joint repair, etc. See Chapter 53 for additional information.

The objective of Activity 09 is to develop and compare pavement design options. See Chapter 54 for additional guidance on pavement design and approval.

PROJECT ACTIVITY (Phase II)

Activity Title: Process Local Agreements

Activity No.: 10

Responsible Unit: Project Support Section

Activity Description:

The district Project Support Section is responsible for the preparation and negotiation of formal agreements between the Department and local governments. These agreements may cover:

- division of work and expense involved between IDOT and the local agency in connection with the improvement,
- responsibilities for the future maintenance of the improvement,
- reference to the acquisition of property rights,
- reimbursement of the costs incurred by the local agency,
- coverage of liability during construction operations, and
- reference to or identification of plans and plan approval.

The Project Support Section also will be responsible for coordinating the transfer of information and plans between the design squad and the local agency. This will be a continuous process throughout the design phase as the design plans are developed. The district Project Support Section also will coordinate with BDE for review and approval of any agreements. This process should be completed prior to the review of all project commitments (Activity 32).

For additional guidance on coordinating with local agencies, see Chapter 5.

PROJECT ACTIVITY (Phase II)

Activity Title: Conduct Field Inspection

Activity No.: 11

Responsible Unit: Design Squad

Activity Description:

After completing the in-house review of the Phase I report and other project data, the design squad should conduct a field inspection of the project. The objective is to review major design features and project-related issues and to identify any potential problems. The design squad will arrange the field inspection and invite, as appropriate, individuals from the following units to the field inspection:

- district Bureau of Project Implementation,
- BDE,
- Bureau of Bridges and Structures,
- district Environmental Unit,
- district Bureau of Operations,
- Land Acquisition Section,
- FHWA,
- local officials, and
- others as deemed appropriate.

The design squad will document the findings and decisions in the minutes of the field inspection.

PROJECT ACTIVITY (Phase II)

Activity Title: Coordinate Utility Plans

Activity No.: 12

Responsible Unit: Project Support Section

Activity Description:

After conducting the field inspection (Activity 11) and any additional field surveys (Activity 08), the design squad will forward the preliminary construction plans with any known utilities plotted to the district Project Support Section. The design squad will also notify the Project Support Section of any unique issues (e.g., environmental, commitments). The Project Support Section will coordinate the transfer of information and plans between the design squad and the utility companies. The utility companies will review IDOT's plans, plot their facilities if not already shown, and prepare the necessary utility adjustment/relocation plans and specifications. As the design squad refines the construction plans, this information will be submitted to the Project Support Section to be forwarded to the utility companies. .

For guidance on preparing utility plans and coordinating with utility companies, see Chapter 6.

PROJECT ACTIVITY (Phase II)

Activity Title: Refine Typical Sections, Plan and Profiles, Grades

Activity No.: 13

Responsible Unit: Design Squad

Activity Description:

Based on the review of the plans (Activity 07), the field inspection (Activity 11), the field survey (Activity 08), the Phase I report, and the project's commitment file, the design squad will refine and/or prepare the project's:

- cover sheet;
- general notes sheet;
- typical sections;
- the plan and profile sheets;
- alignment, ties, and benchmark sheet; and
- construction limits.

Section 63-4 provides guidance on the information that should be included on these plan sheets.

PROJECT ACTIVITY (Phase II)

Activity Title: Develop Detailed Bridge Plans

Activity No.: 14

Responsible Unit: Bureau of Bridges and Structures

Activity Description:

Based on the Phase I report (Activity 01), the Structure Report and TS&L Plans (Activity 03), and other information provided by the design squad, the Bureau of Bridges and Structures will perform the detailed structural design for any bridges and/or major structures on the project. The basic objective of the detailed design phase is to perform the in-depth structural analyses which are necessary to prepare a set of construction plans for any structures. The structural analyses, as applicable, may include the:

- superstructure design (e.g., framing details, deck slab, camber diagram);
- substructure design (e.g., piers, abutments);
- foundation design;
- approach slab design;
- bridge rail design;
- existing physical conditions and deficiencies; and

Once the structural plan sheets are completed, the Bureau of Bridges and Structures will submit the full set of bridge plan sheets and the quantities, pay items, and specifications to the design squad for direct insertion into the final project plans. Activity 14 must be completed before the assembly of information prepared by others (Activity 25).

For Phase II plans prepared by a Consultant, these activities may be the responsibility of the Consultant and approved by the Bureau of Bridges and Structures.

PROJECT ACTIVITY (Phase II)

Activity Title: Develop Environmental Mitigation Plans

Activity No.: 15

Responsible Unit: Environmental Unit

Activity Description:

Based on the approved Phase I report (Activity 01) and the typical sections and plan and profiles sheets (Activity 13), the district Environmental Unit, in consultation with BDE, as appropriate, will prepare the environmental mitigation plans, quantities, and specifications for direct insertion into the final construction plans. This may include wetlands compensation plans, Special Provisions for management and monitoring of special wastes, purchase of replacement lands, memorandums of agreements, etc. The Environmental Unit will ensure that the commitments made in Phase I of the project are incorporated into the plans.

See Section 24-2, Activity 20 or Section 25-2, Activity 25, as appropriate.

PROJECT ACTIVITY (Phase II)

Activity Title: Set Right-of-Way Widths

Activity No.: 16

Responsible Unit: Land Acquisition Section

Activity Description:

Based on the information gathered in developing the Right-of-Way Plan Sheets (Activity 05) and the submittal of the construction limits by the design squad (Activity 13), the Land Acquisition Section will determine the right-of-way widths for the project. The Land Acquisition Section will forward this information to the design squad, which will incorporate this information on the plan and profile sheets.

This information also will be used to initiate the land acquisition process (Activity 24).

PROJECT ACTIVITY (Phase II)

Activity Title: Develop Detailed Plans

Activity No.: 17

Responsible Unit: Design Squad

Activity Description:

Once the design squad has received the Structure Report and TS&L Plans from the Bureau of Bridges and Structures (Activity 03) and the right-of-way plans from the Land Acquisition Section (Activity 05), the design squad can prepare the detailed sheets which will be incorporated into the construction plans. This may include the following:

- stages of construction and traffic control sheets;
- drainage sheets, including special drainage details;
- intersection details;
- interchange details;
- pavement marking details;
- grading plans;
- transition details;
- proposed cross sections, not including pavement template;
- special bikeway and trails plans;
- signing plans, if not prepared by the district Bureau of Operations;
- environmental mitigation plans, if not prepared by others;
- highway lighting plans, if not prepared by others; and
- any other special details.

Section 63-4 presents guidance on what information should be included on each detail or plan sheet.

In addition, the design squad will:

- determine the appropriate level of access control for the facility;
- determine the need for construction permits, permanent right-of-way easements, and/or temporary easements;
- perform the detailed drainage design;
- perform a roadside safety analysis; and
- incorporate any special experimental features into the plans.

PROJECT ACTIVITY (Phase II)

Activity Title: Develop Specialized Plans

Activity No.: 18

Responsible Unit: Various Units

Activity Description:

Based on the typical sections, plan and profile sheets (Activity 13) and detailed plan sheets (Activity 17), various other units within IDOT will prepare their applicable plan sheets, quantities, and special provisions. This may include:

- district Bureau of Operations preparing the landscaping details;
- district Bureau of Operations preparing the signing plans, if included within the project;
- district Bureau of Operations (or Bureau of Electrical Operations in District 1) preparing the traffic signal plans;
- Bureau of Operations, BDE, and design squad developing rest area plans (see Section 16-1);
- Bureau of Operations, BDE, Bureau of Bridges and Structures, Capital Development Board, and the design squad developing weigh stations and weigh-in-motion plans; and/or
- BDE (or Bureau of Electrical Operations in District 1) preparing the highway lighting plans.

In addition, the following units may review the detailed plans prepared by the design squad (Activity 17):

- district Bureau of Operations will review the pavement marking details and stage construction and traffic control plans.
- district Bureau of Project Implementation will review the stage construction and traffic control plans.
- district Hydraulics Section will review the drainage plans and special drainage detail sheets.
- BDE will review bikeway and trail plans.
- Environmental Unit will review the environmental mitigation plans, if prepared by the design squad.

PROJECT ACTIVITY (Phase II)

Activity Title: Finalize Plotting on Cross Sections

Activity No.: 19

Responsible Unit: Design Squad

Activity Description:

During Phase I, the cross sections may have been generated using GEOPAK to determine the earthwork quantities. Using the following information, update and plot the revised cross sections:

- the TS&L Plans from the Bureau of Bridges and Structures (Activity 03);
- the environmental mitigation plans from the Environmental Unit (Activity 15);
- information received from the Project Support Section on utility plans (Activity 12);
- the refined typical sections and plan and profile sheets (Activity 13);
- the detailed plans (Activity 17);
- the Geotechnical Report from the Geotechnical Section (Activity 04);
- the final pavement design from the Pavement Design Section (Activity 09); and
- right-of-way information provided by the Land Acquisition Section (Activity 16).

Also during Activity 19, develop the erosion control plans and specifications according to the criteria in Chapter 59 and the information provided in the Phase I report. These plans and specifications will be submitted to the Environmental Unit for review and approval (Activity 20).

PROJECT ACTIVITY (Phase II)

Activity Title: Approve Erosion Control Plans

Activity No.: 20

Responsible Unit: Environmental Unit

Activity Description:

The Environmental Unit will review and approve the erosion control plans and specifications prepared by the design squad (Activity 19). Once approval has been granted, the erosion control plans will be incorporated into the construction plans (Activity 25). Also, once the erosion control plans have been approved, the Environmental Unit can initiate the process of securing the necessary project permits (Activity 22).

PROJECT ACTIVITY (Phase II)

Activity Title: Assemble All Road Design Information

Activity No.: 21

Responsible Unit: Design Squad

Activity Description:

Throughout the design process, the design squad will have prepared the various plan sheets separately. In Activity 21, conduct the following:

- plot a complete set of plans developed to date (e.g., cover sheet, typical plans, plan and profile sheets, detail plans, cross sections);
- assemble the sheets in the recommended order as noted in Chapter 63;
- review the plans and details to ensure that all necessary information has been included and that the plans and details are compatible with each other;
- calculate the quantities for roadway design elements according to the criteria in Chapter 64 of the *BDE Manual*, the *Coded Pay Items*, and the *Standard Specifications for Road and Bridge Construction* for pay items, units of measurement, rounding conventions, etc.; and
- prepare all required special provisions.

At this time the Schedules of Quantities and the Summary of Quantities will not yet be prepared. For assembly purposes, blank Schedule of Quantities and Summary of Quantities may be included.

PROJECT ACTIVITY (Phase II)

Activity Title: Secure All Permits

Activity No.: 22

Responsible Unit: Environmental Unit

Activity Description:

After the cross sections have been finalized, the erosion control plans have been completed (Activity 19) and approved (Activity 20), the typical sections and plan and profiles sheets have been completed (Activity 13), and the detailed bridge plans have been completed (Activity 14), the Environmental Unit will ensure all applicable permits and approvals required by the project are obtained. Depending upon the project-specific impacts, this may include any or all of the following:

- Section 401 water quality certification and 402 permits from the Illinois Environmental Protection Agency;
- US Army Corps of Engineers, Section 404/Section 10 permit(s);
- US Coast Guard, Section 9 permit; and
- permits issued by Illinois State agencies.

All permits, certifications, and approvals should be received by the Department prior to the review of all project commitments (Activity 32).

Chapter 28 provides a brief description of all Federal and State environmental permits and certifications.

PROJECT ACTIVITY (Phase II)

Activity Title: Process Utility Agreements or Adjustments

Activity No.: 23

Responsible Unit: Project Support Section

Activity Description:

Based on the roadway plans (Activities 13, 17, and 19), the detailed bridge plans (Activity 14), and the initial utility plans (Activity 12), the Project Support Section will work with the impacted utility companies and municipalities to implement the utility process. This process may include the following:

1. Plan Preparation. The utility companies are responsible for preparing all utility adjustment/relocation plans. The plans will be developed according to the criteria in Chapter 6.

2. Funding. Depending on the right-of-way ownership for existing and proposed utility locations, transportation funds may be eligible for utility adjustments/relocations required by the highway project; see Chapter 6. The Utilities pay for all betterments.

3. Agreements. The Project Support Section will prepare a Utility Agreement for each affected utility and will work with the utility companies to gain their input and approval. The Project Support Section will coordinate with BDE for review and approval of the agreements.

The Project Support Section will ensure that the utility process is completed before the review of all project commitments (Activity 32).

PROJECT ACTIVITY (Phase II)

Activity Title: Implement Land Acquisition Process

Activity No.: 24

Responsible Unit: Land Acquisition Section

Activity Description:

Based on the right-of-way plans (Activity 05), the final typical section and plan and profile sheets (Activity 13), and the right-of-way width determination (Activity 16), the Land Acquisition Section will implement the land acquisition procurement process. This will include the land acquisition functions of appraisal, negotiation, acquisition and, if necessary, condemnation. The Land Acquisition Section will also negotiate the terms of any construction permits, permanent easements, and/or temporary easements.

The Land Acquisition Section will ensure that the land acquisition procurement process is completed before the final review of all project commitments (Activity 32).

The Land Acquisition Section should coordinate with the design squad to ensure any negotiated considerations/commitments are included in the contract plans.

PROJECT ACTIVITY (Phase II)

Activity Title: Assemble All Information Prepared by Others

Activity No.: 25

Responsible Unit: Design Squad

Activity Description:

At this stage of project development, the design squad will have received the following completed plans, special provisions, pay items, and quantities from other IDOT units:

- the bridge/structure plans from the Bureau of Bridges and Structures (Activity 14);
- the landscaping details from the district Bureau of Operations (Activity 18);
- if included in the project, the signing plans from the district Bureau of Operations (Activity 18);
- the traffic signal plans from the district Bureau of Operations (or Bureau of Electrical Operations in District 1) (Activity 18);
- rest area plans from the Bureau of Operations and BDE (Activity 18);
- weigh stations and weigh-in-motion plans from the Bureau of Operations, BDE, Bureau of Bridges and Structures, and Capital Development Board (Activity 18); and
- the highway lighting plans from BDE (or Bureau of Electrical Operations in District 1) (Activity 18).

In addition, the design squad will have received approval of the erosion control plans from the Environmental Unit (Activity 20) and right-of-way widths from the Land Acquisition Section (Activity 16).

The design squad will review these materials 1) to identify and incorporate any information which must be incorporated directly into the detailed road design and 2) to assemble those plan sheets prepared by others into the overall set of construction plans.

PROJECT ACTIVITY (Phase II)

Activity Title: Conduct Plan-in-Hand Field Inspection

Activity No.: 26

Responsible Unit: Design Squad

Activity Description:

At this stage of project development, all major design work has been completed, including roadway design, traffic items, structural elements, erosion control plans, right-of-way design, etc. The design squad is responsible for scheduling the Plan-in-Hand (PIH) review of the project. The PIH review is an in-depth office and on-site review of all project elements to ensure that all details and commitments have been satisfactorily incorporated into the construction plans and specifications, and that the project is nearly ready to advance to construction.

As applicable, the design squad will invite the following to conduct an office and PIH field inspection:

- district Bureau of Project Implementation,
- BDE,
- district Bureau of Operations,
- Bureau of Bridges and Structures,
- FHWA,
- local officials, and
- others as deemed appropriate.

Once the PIH office and field inspection have been completed, the design squad will prepare the PIH minutes to document all significant decisions made during the PIH review. After approval by the Program Development Engineer, distribute the PIH minutes to:

- all applicable Bureau Chiefs;
- District Engineer;
- all parties involved in the field review;
- FHWA, if applicable; and
- any other individuals or sections as deemed appropriate.

All parties receiving a copy of the PIH minutes are requested to provide comments on the minutes. Concurrence of the minutes will be assumed if no comments are received by the specified date.

PROJECT ACTIVITY (Phase II)

Activity Title: Prepare Schedules of Quantities

Activity No.: 27

Responsible Unit: Design Squad

Activity Description:

Based on any modifications due to the Plan-in-Hand field inspection (Activity 26), the design squad will refine the project quantities for the roadway design items developed during Activity 21. Using these quantities and those provided by other IDOT units (Activity 25), the design squad will prepare the Schedule of Quantities sheets according to the criteria presented in Chapter 64. These quantities will be incorporated onto the Summary of Quantities Sheet (Activity 28).

PROJECT ACTIVITY (Phase II)

Activity Title: Prepare Combined Summary of Quantities

Activity No.: 28

Responsible Unit: Design Squad

Activity Description:

Using the quantities developed in Activity 21, refined in Activity 27, and those provided by other IDOT units (Activity 25), the design squad will prepare the Summary of Quantities sheets, which will summarize all pay items necessary to construct the improvement. It also should include the applicable construction and safety code items, pay item code numbers, units of measurement, total quantities, and quantity breakdown for each section. One or more summary sheets typically will be included in each set of plans. Do not show other data on the summary sheets (e.g., general notes). When preparing the Summary of Quantities sheets, it is important that all quantities be calculated and segregated accordingly prior to completing the Summary of Quantities.

The design squad should coordinate with the Project Support Section to ensure that the percentages and cost breakdown in the Summary of Quantities and the Local Agency agreements are identical.

For additional guidance on preparing the Summary of Quantities, see Section 63-4.

PROJECT ACTIVITY (Phase II)

Activity Title: Prepare Final Plans and Specifications

Activity No.: 29

Responsible Unit: Design Squad/Others

Activity Description:

Based on the Plan-in-Hand Review and minutes (Activity 26), all bureaus and sections responsible for their respective project plans will make all necessary plan and specifications revisions. This will produce the final set of project plans ready for construction. Specifically for the design squad, the design squad will be responsible for revising the roadway plans and specifications. Once completed, the plans will be distributed for district review (Activity 31) and will allow the District Estimating Engineer to prepare the Final Plan Submittal Estimate.

Complete quality control/quality assurance (QC/QA) prior to the plans being circulated for district review.

PROJECT ACTIVITY (Phase II)

Activity Title: Prepare Final Plan Submittal Estimate

Activity No.: 30

Responsible Unit: District Estimating Engineer

Activity Description:

Based on the information from the final plans and specifications (Activity 29), the District Estimating Engineer will prepare the final district cost estimate. This may be a new estimate or an update of an earlier cost estimate prepared during Phase I or a revised cost estimate prepared during Phase II. This estimate will be submitted to the BDE Project Management Unit, which will use it to develop the Engineer's Estimate.

Chapter 65 provides guidance on the preparation of project cost estimates.

PROJECT ACTIVITY (Phase II)

Activity Title: Circulate Plans for District Review

Activity No.: 31

Responsible Unit: Design Squad

Activity Description:

Once all revisions from the Plan-in-Hand Review and minutes have been made to the plans and specifications, the design squad will submit a completed set of construction plans to the district units involved with the project for final review and comment. Typically, this review will consist of:

- reviewing the plans to ensure the reviewer's comments from previous reviews have been incorporated;
- ensuring that the changes do not conflict with the bureau's commitments; and
- ensuring that the plans conform to the Department's design criteria.

If changes are requested at this point which are desirable, but not mandatory, the Studies and Plans Engineer will determine if they should be incorporated. This will depend on other factors which may preclude the changes from being added to the plans. If another bureau determines the changes still should be incorporated, an appeal can be made to the Program Development Engineer for their incorporation.

PROJECT ACTIVITY (Phase II)

Activity Title: Review all Project Commitments

Activity No.: 32

Responsible Unit: Design Squad

Activity Description:

At this point in project development, the project design is essentially complete. The design squad must ensure that the following elements have been completed and/or have been incorporated into the plans:

- all environmental permits have been secured (Activity 22);
- all utility agreements and adjustments have been processed and signed (Activity 23);
- the final district cost estimate has been completed (Activity 30);
- the land acquisition process has been completed (Activity 24);
- all local agreements and letters of understanding have been processed and signed (Activity 10);
- all railroad agreements have been processed and signed (Activity 06); and
- all commitments made during the project development, including those made during Phases I and II, have been incorporated.

The design squad must carefully review all minutes of meetings, transcripts of public hearings, and the project study files to ensure that all commitments have been incorporated. If there are any questions, the design squad should contact the preparer of the Phase I report or the Unit making the commitment during Phase II.

If it is discovered during the plan development that a change is required to the approved Phase I report or a commitment cannot be met, the design squad must immediately notify BDE and all other applicable units so that the appropriate action can be taken. Failure to provide the appropriate notification and review may result in project delay.

PROJECT ACTIVITY (Phase II)

Activity Title: Submit PS & E to BDE

Activity No.: 33

Responsible Unit: Design Squad

Activity Description:

Once the plans are complete and the design squad has ensured all commitments, agreements, permits, etc., are complete or have been incorporated, the design squad will submit the following items to the BDE Program Support Unit:

- the Certification Acceptance/Project Status Form, signed by the District Engineer;
- a cover sheet signed by the District Engineer indicating his/her approval of the plans;
- one complete set of full-size plans on reproducible paper, mylar, or vellum (see Chapter 63 for the Department's guidelines on preparing plan sheets);
- one copy of each special provision required for the project, including a copy of the electronic file in Microsoft Word format (see Section 66-1.04 for the procedures on developing special provisions);
- a completed Recurring Special Provision check sheet (see Chapter 66);
- the project quantities on Form BD-213 or BDE approved equal (see Chapter 64 for the procedures on determining plan quantities);
- the expected construction time for the project (see Section 66-2.03 for the Department's guidelines on determining the expected construction time); and
- copies or originals of all permits and agreements.

To place an improvement on any specific letting, it is imperative that the plans and supporting documents be submitted according to the schedules established in Section 66-2 which indicate the minimum number of weeks prior to the letting date for the submittal or completion of a particular phase of work.

PROJECT ACTIVITY (Phase II)

Activity Title: Process Contract

Activity No.: 34

Responsible Unit: BDE

Activity Description:

Once BDE has received the plans and other information from the district (Activity 33), it will conduct the following:

- prepare the Engineer's Estimate;
- verify that the plans are on the list of recommended projects;
- check the Certification Acceptance /Project Status Form;
- verify the project is programmed and the scope of work is correct;
- determine the final funding source;
- check all agreements to ensure they are consistent with the project;
- submit the plans, special provisions, quantities, etc., for review and comment;
- prepare the Transportation Bulletin and advertise the project;
- if necessary, submit the PS & E to FHWA for approval;
- prepare the contract proposal;
- submit the proposal and plans to bidders;
- implement the letting process;
- review all bids; and
- execute the contract.

For additional guidance on the contract process, see Chapter 66.

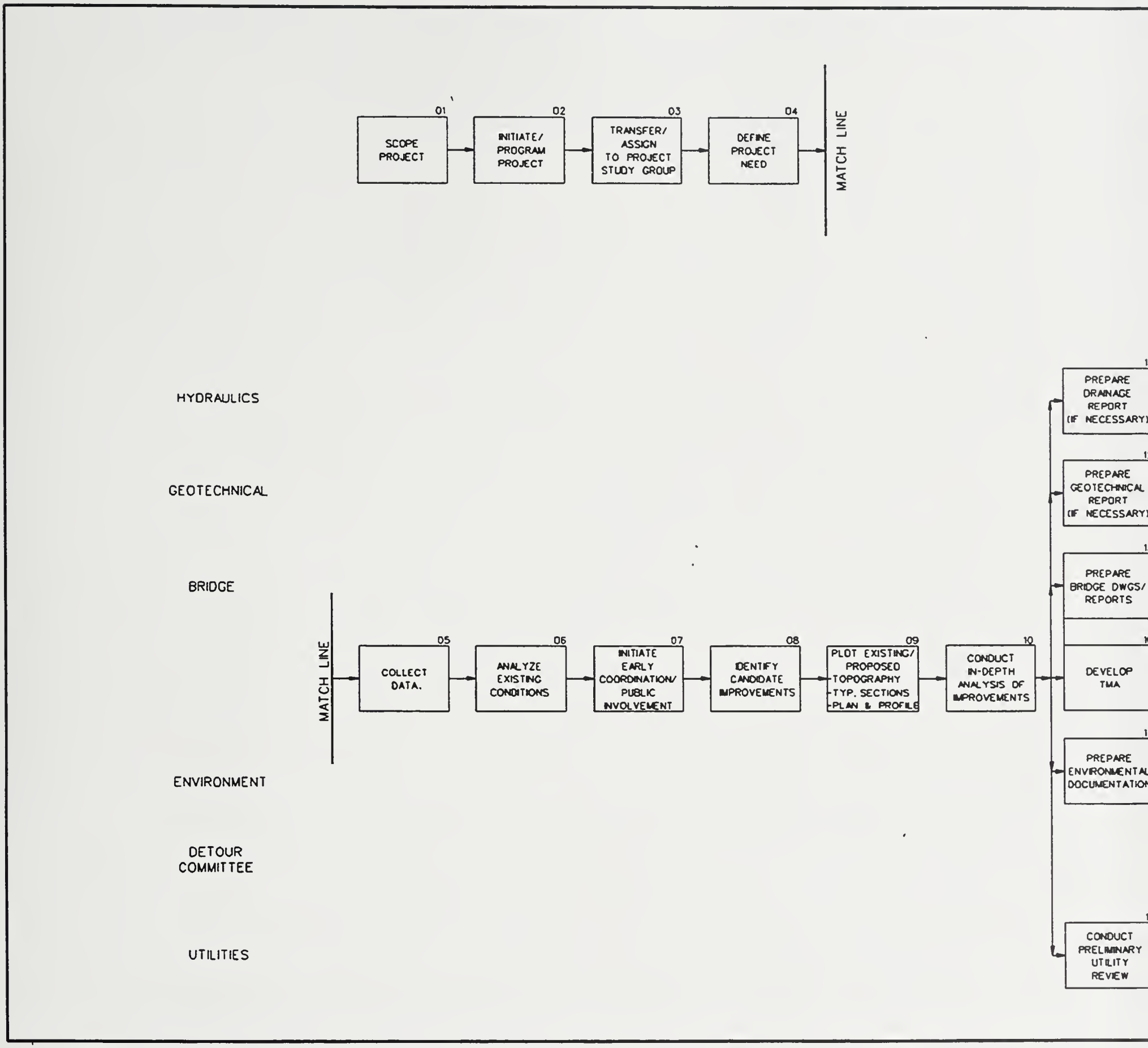
3-3 PROJECTS WITH MINOR RIGHT-OF-WAY ACQUISITIONS

3-3.01 Phase I Studies

Figure 3-3A illustrates a typical Phase I flowchart or network for a 3R or minor widening project on existing alignment that will require minimal or no ROW acquisitions. These projects typically are classified as Categorical Exclusions and require a Project Report. For guidance on the preparation and format of Project Reports, see Chapters 11 and 12. For other project types, see the flowcharts in Chapter 2, Section 3-2, and Section 3-4. Following Figure 3-3A are brief write-ups for each activity.

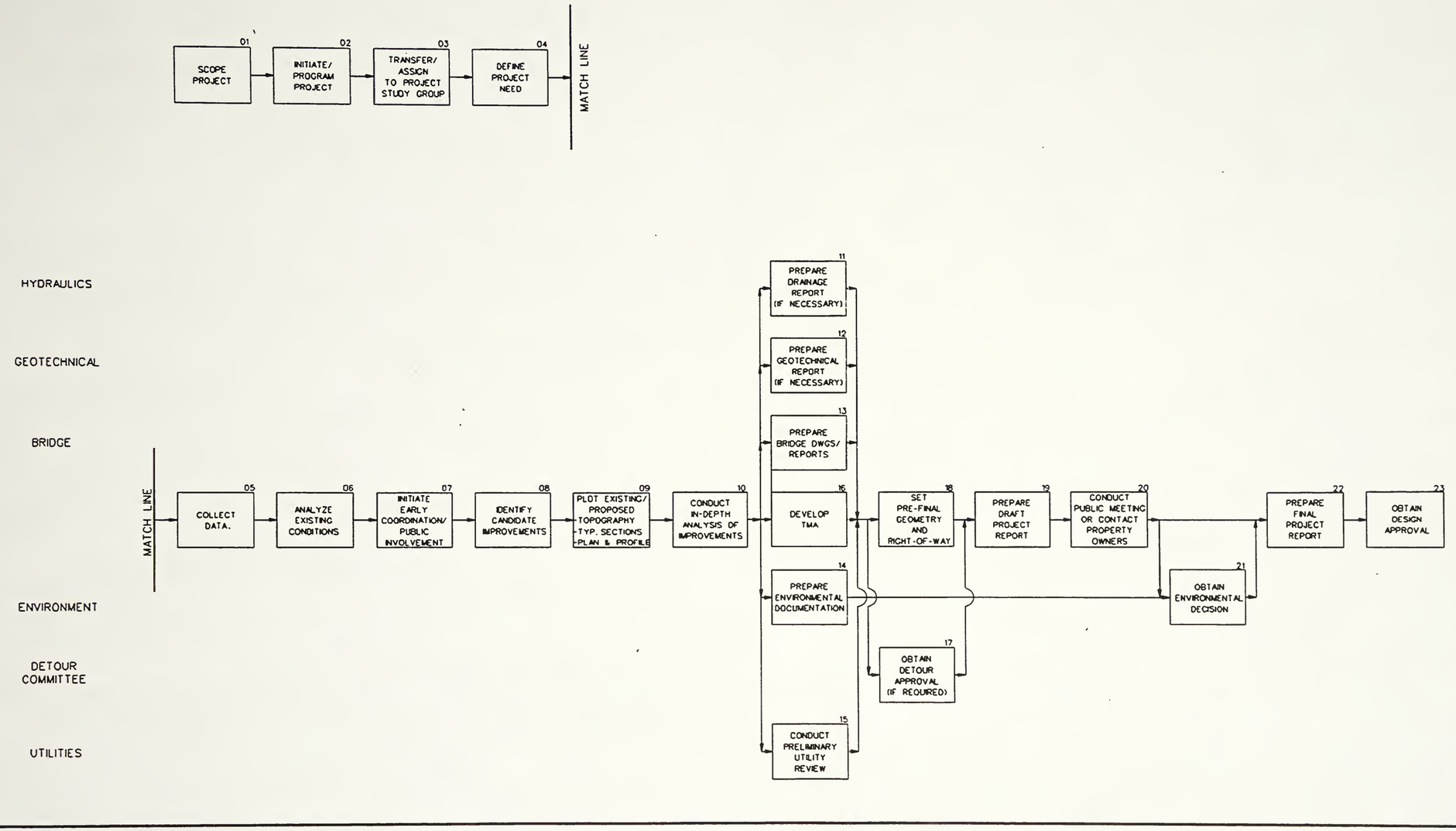
Depending on the project, particularly those requiring structural work and/or right-of-way acquisitions, it may be desirable to begin the Phase II work prior to obtaining the approval of the Project Report. Typically, some Phase II activities can be started after the draft of the Project Report has been prepared.

Projects on the National Highway System with a cost of more than $25 million will require a Value Engineering study. See Section 2-1.



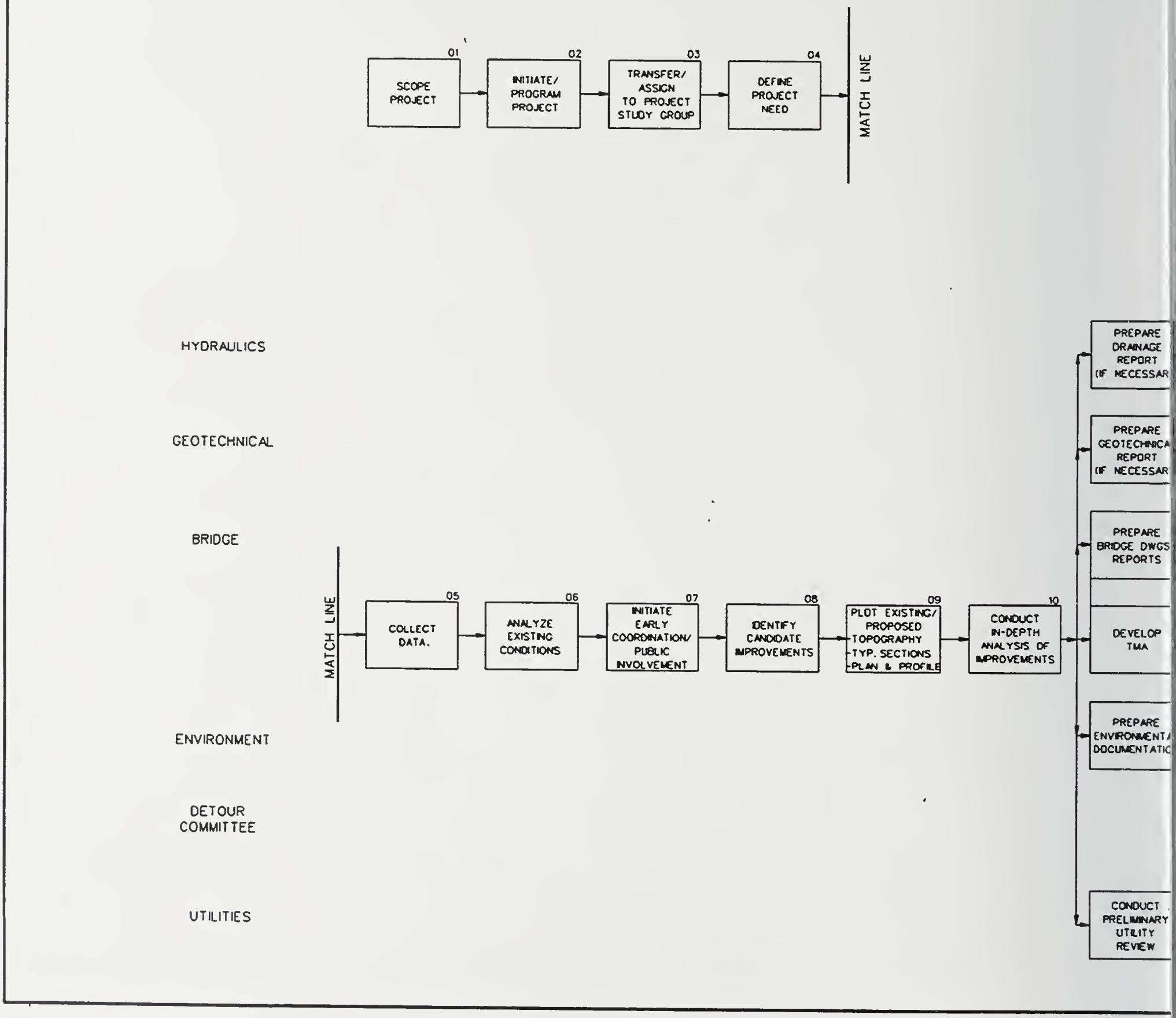
PHASE I PROJECT D
(3R or Minor Widening F

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PHASE I PROJECT DEVELOPMENT NETWORK
(3R or Minor Widening Project on Existing Alignment)

Figure 3-3A



PHASE I PROJECT
(3R or Minor Widening

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PROJECT ACTIVITY (Phase I)

Activity Title: Scope Project

Activity No.: 01

Responsible Unit: District Bureau of Program Development

Activity Description:

A roadway project proposal can originate from a variety of sources, including local officials or metropolitan planning organizations (community-based need), directly from the IDOT district office (district-based need), from a Bureau in the central office (Office of Planning and Programming, BDE, Operations, etc.), and from systems such as the Safety Management System targeting a special need or a Statewide need.

Before a project is entered onto the Department's Proposed Highway Improvement Program, the district Programming Section initially develops and documents the project concept. Developing the project concept will typically involve the following:

- establishing that there is, in fact, a need for the project;
- making a preliminary determination of the project scope of work;
- reviewing any available data and records;
- reviewing existing plans;
- conducting an initial evaluation of right-of-way, utility, and environmental impacts and the likely level of environmental evaluation;
- developing a rough, preliminary cost estimate; and
- developing a set of review plans.

This information is forwarded for review and comment to Program Development, Operations, BDE, Environmental Unit, Bridges and Structures, and other individuals, as appropriate. Programming will refine the scope based on the comments received.

Once the scope, cost, and schedule have been defined, district Programming will forward this information to the Office of Planning and Programming for incorporation into the Department's multi-year program (Activity 02).

PROJECT ACTIVITY (Phase I)

Activity Title: Initiate/Program Project

Activity No.: 02

Responsible Unit: Office of Planning and Programming

Activity Description:

Candidate projects are submitted by the districts as a request for project programming to the Office of Planning and Programming. Based on a Statewide assessment of highway improvement needs and available funds, the Office of Planning and Programming will develop the Department's Proposed Highway Improvement Program. This will establish an individual project as an active project for further development.

The Office of Planning and Programming annually issues guidelines for multi-year programming criteria. This includes programming criteria for:

- improvement categories,
- pavement surface conditions,
- deficient bridges,
- safety improvements,
- Interstate rehabilitation,
- widening narrow and deteriorated pavements,
- improving intersections and reducing traffic bottlenecks,
- new construction/reconstruction of major facilities,
- transportation enhancement projects,
- Congestion Mitigation Air Quality (CMAQ) projects, and
- bicycle accommodation.

PROJECT ACTIVITY (Phase I)

Activity Title: Transfer/Assign to Project Study Group

Activity No.: 03

Responsible Unit: Studies and Plans Engineer

Activity Description:

At this point the project will either be assigned to a project study group within the district Bureau of Program Development or to a consultant to begin the design study. The Studies and Plans Engineer will have the overall day-to-day responsibility for advancing the project through the Phase I study process. He/she will:

- coordinate directly with other units within the Department;
- attend all internal meetings and field inspections;
- ensure that the project study meets all Department criteria and procedures;
- report directly to the District Program Development Engineer on all significant project activities, problems, and developments; and
- participate in the public involvement process.

The number and expertise of personnel initially assigned to the project study group will vary with the nature and scope of the proposed improvement. The personnel assigned will also vary over time relative to the priority for completion, the available lead time, and the activity in project development under study.

PROJECT ACTIVITY (Phase I)

Activity Title: Define Project Need

Activity No.: 04

Responsible Unit: Project Studies Group/BDE/FHWA/Office of Planning & Programming

Activity Description:

For a transportation project, the project study group must first define the project need, which will direct the process for the identification of design alternatives, in-depth analyses and, ultimately, selection of the preferred design. This will consist of reaffirming the need for the proposed improvement, establishing project goals and objectives, and establishing the study area and logical termini. The feasibility of a design depends on the social, economic, environmental, and engineering effects of the proposed highway improvement. Previous studies and decisions should be reaffirmed and/or updated as necessary. Other factors that must be considered include:

- existing traffic volumes and capacity deficiencies;
- crash information;
- alignment and profile deficiencies;
- structural integrity of bridges, pavements, and culverts;
- lane and shoulder widths;
- roadside safety;
- transportation demand;
- potential cost savings to the traveling public;
- enhanced economic development potential;
- programming guidelines;
- commitments to elected officials; and
- public input.

Further study may result in revisions to the preliminary need.

PROJECT ACTIVITY (Phase I)

Activity Title: Collect Data

Activity No.: 05

Responsible Unit: Project Study Group

Activity Description:

Once the project need has been identified (Activity 04), the project study group must gather and inventory information and data for the project. All types of data, including social, economic, environmental, and engineering, should be gathered simultaneously. The amount and type of information to be collected will vary with the nature and scope of the proposed improvement. Some of the information that is gathered includes:

- roadway, field, aerial, and stream surveys;
- existing roadway classifications and truck routes;
- existing as-built plans and maintenance records;
- existing highway geometrics;
- existing on-street parking;
- crash rate maps and collision diagrams;
- pavement and bridge condition reports;
- existing ROW information and any encroachments;
- ADT traffic maps and DHVs for current and design year traffic (all affected routes);
- inventory of posted speed limits;
- detailed transportation maps and plans with all modes of travel included;
- utility installations and detailed maps from utility companies;
- hydraulics survey, drainage survey, sewer atlas, and flooding information tables;
- fire districts, mail and school bus routes, location of churches, drainage districts, historic sites, and field-tile maps;
- commercial, agricultural, industrial, recreational, historic, and residential land use;
- conservation areas, archaeological sites, wetlands, special waste sites, etc.;
- local, State, and Federal agency coordination needs;
- current topographic mapping and aerial photographic mosaics;
- geotechnical investigations;
- joint development uses and scenic easements;
- estimate of cost (see Section 11-2.15) and road-user benefits (see Section 11-7.01); and
- maintenance agreements with locals.

See Chapters 11 and 12 for further guidance on the information that should be collected for a Phase I study. See Section 23-3, Activity 02 for further guidance on the collection of environmental information for the project.

PROJECT ACTIVITY (Phase I)

Activity Title: Analyze Existing Conditions

Activity No.: 06

Responsible Unit: Project Study Group

Activity Description:

Using as-built plans, aerial and/or field surveys, previously prepared reports, and data collected in Activity 05, the project study group will review and identify the following existing conditions:

- the locations of streams, railroads, and other topographic features;
- existing traffic and capacity deficiencies;
- pavement, bridge, and culvert structural integrity;
- crash information;
- alignment and profile deficiencies;
- existing lane and shoulder widths;
- existing ROW, ROW constraints, and encroachments;
- roadside safety concerns;
- existing and planned land uses from local governments, MPOs, fire districts, schools, etc.;
- existing agreements with utilities, railroads, local agencies, etc;
- existing drainage patterns and drainage systems;
- sensitive noise receptors;
- wetlands, applicable 4(f), 6(f), and 106 sites, etc.;
- special waste sites; and
- tree and vegetation inventory.

If not already done, determine the State plane coordinates of all control points (POTs and PIs) from the project mapping/survey. Input this information and the radii of horizontal curves into a computer file to mathematically describe the alignment. Once an alignment is mathematized and tied into digitized mapping files, the alignment can then be stationed from west to east or south to north and the information stored as a computer file for further design work.

PROJECT ACTIVITY (Phase I)

Activity Title: Initiate Early Coordination/Public Involvement

Activity No.: 07

Responsible Unit: Project Study Group

Activity Description:

Coordination with other Department and governmental agencies, as appropriate, is an important aspect during the design study process. This coordination should begin as early as practical in project planning.

At this stage of the design study process, the project study group will initiate early coordination with other Department Units or Bureaus and governmental agencies (e.g., Environmental, FHWA, Land Acquisition, Construction, Operations, Bridges and Structures, Utilities) that have an interest in the project or have information or expertise concerning any issues the project may involve. The purpose of this coordination will be to assist in the identification of reasonable design alternatives and in gathering information to evaluate the social, economic, engineering, and environmental impacts of the proposed project and possible impact mitigation measures. This coordination should begin as early as practical. Early coordination will also identify the cooperating agencies.

Also, this Activity will allow the public an opportunity for input and comment on the project. Typically, this will consist of informational letters, advertisements, and/or meetings with local government officials, fire districts, school districts, drainage districts, historic commissions, MPOs, residents, businesses, etc. These meetings or letters may include:

- advising local, State, and Federal officials that a project has been initiated and that a study is underway;
- procedures for developing possible coordination and public service involvement;
- a discussion on the project scope;
- a request for information (e.g., MPO plans, drainage problems, transit needs);
- a discussion with businesses, railroads, and utility companies; and
- talking with individuals at public information meetings about individual concerns.

Public coordination must be ongoing throughout the project development. For guidance on public involvement, see Chapter 19.

PROJECT ACTIVITY (Phase I)

Activity Title: Identify Candidate Improvements

Activity No.: 08

Responsible Unit: Project Study Group

Activity Description:

Based on the information gathered (Activity 05) and analyzed (Activity 06), the project study group will review the types of improvements that meet the defined need for the project (Activity 04) and determine which designs are reasonable and cost effective. Some of the improvements that can be considered may include the following:

- increasing lane and shoulder widths;
- improving sight distance (e.g., stopping, decision, intersection);
- upgrading or realigning horizontal curves;
- improving superelevation rates and/or transition lengths;
- upgrading or realigning vertical curves;
- flattening grades;
- rehabilitating, reconstructing, or resurfacing the pavement;
- adding turn lanes or other improvements at intersections;
- upgrading, widening, or replacing structures;
- flattening side slopes;
- improving the clear zone;
- replacing and/or upgrading guardrail, impact attenuators, and end sections;
- replacing or upgrading signs, traffic signals, and lighting supports;
- adding or upgrading traffic signals;
- adding or upgrading highway lighting;
- upgrading pavement markings, including reflectorized pavement markings;
- upgrading culverts and/or other drainage systems;
- adding or removing curbs and gutters;
- adding mailbox turnouts;
- relocating utilities;
- upgrading railroad crossings and signals; and
- replacing or adding sidewalks, curb ramps, or bicycle facilities.

PROJECT ACTIVITY (Phase I)

Activity Title: Plot Existing/Proposed Topography, Typical Sections, Plan and Profile

Activity No.: 09

Responsible Unit: Project Study Group

Activity Description:

For this Activity, conduct the following:

- If not already done, plot the existing topography including property lines, property owner names, business names and type, names of roads, driveways/access roads, and all other important geographic and cultural features.
- Plot existing horizontal and vertical alignments and cross sections.
- Determine the proposed typical sections.
- Once the geometric elements have been set, determine the preliminary right-of-way limits.
- Determine the rough quantities for the proposed design and refine the cost estimate. If no quantities are available, use a generalized cost (e.g., cost per mile (kilometer)); see Sections 12-4 and 65-1.02.

IDOT uses the computer software program GEOPAK for laying out alignments, profiles, cross section designs, quantity calculations, and for determining construction limits. GEOPAK also can be used to generate 3-D and perspective plots for any portion of the roadway. Use 3-D plots in the design process to assess potential safety problems and the aesthetics of the design.

PROJECT ACTIVITY (Phase I)

Activity Title: Conduct In-Depth Analysis of Improvements

Activity No.: 10

Responsible Unit: Project Study Group

Activity Description:

For each of the candidate improvements identified in Activity 08, the project study group will conduct an analysis to determine if the improvement can be practically and cost effectively incorporated into the design. For example, the project study group will review the existing horizontal curvature against the criteria presented in Chapter 49 to determine if the existing curvature can be retained or should be upgraded. For each design improvement, the project study group should conduct a road user benefit analysis; see Section 11-7.01. Often, incorporating all the improvements found to be cost effective will exceed the proposed construction cost estimate for the project. Therefore, the project study group will need to prioritize the improvements to fit within the proposed construction funds or request additional funds to incorporate the changes.

The results of this and previous Activities will be submitted, as applicable, to the Hydraulics Unit, Geotechnical Unit, Bureau of Bridges and Structures, Environmental Unit, and Project Support Section to allow these Units to prepare their applicable reports for the Project Report.

PROJECT ACTIVITY (Phase I)

Activity Title: Prepare Drainage Report (If Necessary)

Activity No.: 11

Responsible Unit: Hydraulics Unit

Activity Description:

Based on the information provided from the project study group (Activity 10), the Hydraulics Unit will perform the hydrology/hydraulics analysis, including the following:

- culvert sizing,
- longitudinal encroachments,
- existing and proposed storm drainage facilities,
- stormwater management, and
- pump stations.

Based on its evaluation, the Hydraulics Unit will prepare a Drainage Report. The project study group will use this information in making the final design determinations. It will also incorporate the Drainage Report into the final Project Report. See Chapter 40 and the *IDOT Drainage Manual* for more information on Drainage Reports.

PROJECT ACTIVITY (Phase I)

Activity Title: Prepare Geotechnical Report (If Necessary)

Activity No.: 12

Responsible Unit: Geotechnical Unit

Activity Description:

Based on the information provided from the project study group (Activity 10), the Geotechnical Unit will prepare the Geotechnical Report. The analyses may include:

- basic soil properties (e.g., AASHTO soils classification);
- shrink/swell factors;
- properties of subsurface strata;
- potential for slides; and
- slope stability at proposed cuts.

Based on its evaluation, the Geotechnical Unit will prepare a Geotechnical Report. The project study group will use this information in making the final design determinations. In addition, the Geotechnical Report will be incorporated into the final Project Report. See the *IDOT Geotechnical Manual* for more information.

PROJECT ACTIVITY (Phase I)

Activity Title: Prepare Bridge Drawings/Reports

Activity No.: 13

Responsible Unit: Bureau of Bridges and Structures/Project Study Group

Activity Description:

Based on the information provided from the project study group (Activity 10), the Bureau of Bridges and Structures (BB&S) will prepare the Proposed Structure Sketch for major structures, which will illustrate:

- the type of structures,
- approximate horizontal and vertical alignment and skew,
- approximate pier locations, and
- typical bridge deck section.

The project study group will prepare this sketch for other than major structures.

In addition, prepare the Bridge Condition Report for existing bridges which will include:

- a description of the physical conditions and deficiencies that mandate repair or replacement,
- a verification of the apparent soundness of any structure elements recommended for reuse plus the economic advantage gained by their reuse,
- a statement of any geometric or hydraulic improvement requirements, and
- a recommendation for the scope of the proposed work.

For additional information on the Proposed Structure Sketch and Bridge Condition Reports, see Chapter 39. The BB&S will also prepare the Hydraulics Report for major structures which will involve:

- the hydraulic analysis to determine the necessary dimensions of the waterway opening to pass the design flood, to meet the backwater allowances, and to satisfy any regulatory flood plain requirements;
- the hydraulic scour analysis to assist in determining the proper foundation design for the bridge; and
- a suggested freeboard elevation.

The project study group will prepare this report for other structures and the BB&S will approve the report.

The Structure Sketch and Hydraulics Report will be incorporated into the final Project Report.

PROJECT ACTIVITY (Phase I)

Activity Title: Prepare Environmental Documentation

Activity No.: 14

Responsible Unit: Environmental Unit

Activity Description:

Once the preliminary design improvements have been identified (Activity 08) and analyzed (Activity 10), the district Environmental Unit will initiate the environmental process. Typically, these projects will be classified as Categorical Exclusions (see Chapter 23).

This Activity will include:

- discussing the project at a coordination meeting, which may include obtaining FHWA concurrence in the appropriateness of the proposed environmental document processing type;
- assembling and analyzing the necessary information on environmental issues;
- determining and evaluating potential environmental impacts, mitigation measures, and applicable compliance requirements; and
- preparing the environmental documentation.

See Part III, Environmental Procedures, for further guidance on environmental documentation requirements and procedures.

PROJECT ACTIVITY (Phase I)

Activity Title: Conduct Preliminary Utility Review

Activity No.: 15

Responsible Unit: Project Support Section

Activity Description:

The project study group will provide the district Project Support Section with copies of the plan sheets for the proposed project. The Project Support Section will work with the applicable utility companies to identify project impacts on existing utilities and inform them of environmental issues which may affect their adjustments and relocations. The following items of work are typically performed:

1. Underground. The Project Support Section will coordinate with the district survey crew and will, if needed, request an underground survey to determine the depths and location of existing underground utilities within the project limits, especially fiber optic cables, water supply, and sanitary lines in urban areas.

2. Overhead. Any major above-ground utilities which may be impacted by the project. The Project Support Section may prepare a cost estimate to determine if a special effort should be exercised to avoid certain utilities.

3. Impacts. The Project Support Section will notify any utility companies which will be potentially impacted by the upcoming project, and the Section will request that the Utility contact IDOT if it plans any work in the vicinity of the project.

The Project Support Section will document its findings in a report or memorandum and submit it to the project study group. The project study group will use the information in making the final design determinations and document its findings in the Project Report.

For additional guidance on utility coordination, see Chapter 6.

PROJECT ACTIVITY (Phase I)

Activity Title: Develop Traffic Management Analysis

Activity No.: 16

Responsible Unit: Project Study Group

Activity Description:

The maintenance of traffic flow during construction of a State highway will involve traffic and worker safety, public relations, and capital costs to the Department. A well-planned method for maintaining traffic flow can minimize complaints from the traveling public and from residents and businesses along the affected route. Each construction site must be evaluated on its own merits as to the appropriate method for maintaining traffic. The Project Report should contain a Traffic Management Analysis (TMA) indicating an overall strategy for accommodating traffic during construction. Chapter 13 presents the goals and objectives for a TMA. The TMA should address the preferred traffic control method, alternative traffic control applications, geometric design criteria, the impact traffic will have on other facilities, local concerns, cost effectiveness of various alternatives, etc. Chapter 55 and the *Highway Standards* provide the design criteria to use when designing a traffic control plan. In addition, consider the following:

- The TMA not only must address the alternatives confined to the project site, but it must also evaluate the impact traffic will have on the entire corridor.

- No formal public involvement activity (e.g., design hearing) should occur until the recommended alternative in the TMA Report has been approved by BDE. However, informal public involvement will be necessary during the analysis of alternatives.

PROJECT ACTIVITY (Phase I)

Activity Title: Obtain Detour Approval (If Required)

Activity No.: 17

Responsible Unit: Detour Committee

Activity Description:

In general, the TMA (Activity 16) will be approved as part of the Project Report. Where there is a road closure of a marked route with a marked detour, forward the TMA to BDE for review and approval from the Detour Committee. For an unmarked State highway road closure or for a road proposed to remain open by either stage construction or a runaround, the TMA will be approved by the appropriate BDE field engineer. For a closed unmarked State highway, also coordinate with the local county officials prior to the submittal of the Project Report.

PROJECT ACTIVITY (Phase I)

Activity Title: Set Pre-Final Geometry and Right-of-Way

Activity No.: 18

Responsible Unit: Project Study Group

Activity Description:

Based on the previous analyses for the recommended design improvements and information provided by others (Activities 10, 11, 12, 13, 14, and 15), the project study group will:

- make any necessary adjustments to the selected vertical and horizontal alignments;
- obtain BDE and FHWA, if applicable, approval for design exceptions;
- make any necessary adjustments to the typical sections;
- set preliminary construction limits;
- set preliminary right-of-way limits;
- determine any easement requirements; and
- determine if any utility adjustments or displacements are necessary.

See Part IV, Roadway Design Elements, and Part V, Design of Highway Types, for detailed information on geometric design and the *IDOT Land Acquisition Manual* for guidance on right-of-way impacts.

PROJECT ACTIVITY (Phase I)

Activity Title: Prepare Draft Project Report

Activity No.: 19

Responsible Unit: Project Study Group

Activity Description:

Once the analyses have been conducted and the information gathered, the project study group will prepare the draft Project Report. Chapter 12 presents the format that should be used when preparing a Project Report. Because the design study should be essentially complete, it should be possible to prepare the draft Project Report in its near-final format. The discovery of new, significant information during the public meeting (Activity 20) should be rare if the design study has been properly developed. The only changes necessary to prepare the final Project Report should be the addition of information concerning the public meeting (Activity 20), incorporation of revisions, if necessary, to respond to comments received at the public meeting, and inclusion of final conclusions/recommendations.

In general, the draft Project Report should be submitted to the BDE field engineer for review prior to its availability for public viewing and inspection at the public meeting. Formal approval by BDE for release is not normally issued. Copies made available to the public should be marked as "draft" or "preliminary."

The Project Report should include:

- Project Report approval form;
- a summary of need and location of the project;
- description of the proposed improvements;
- a list of all design improvements eliminated and the reasons for their elimination;
- a summary of the environmental sign-offs obtained;
- the results of public involvement;
- the proposed maintenance and protection of traffic plan;
- a list of commitments made to the public, Federal and local agencies, etc.;
- the estimate of costs;
- an appendix showing typical sections, aerial photography, mapping, etc.; and
- reference to analyses and other reports conducted during the design study, including the environmental document, if applicable.

For further guidance on information to be included in the Project Report, see Chapter 12.

PROJECT ACTIVITY (Phase I)

Activity Title: Conduct Public Meeting

Activity No.: 20

Responsible Unit: Project Study Group

Activity Description:

As required by the project, a public meeting will be held at this stage of the project study to present to the public, and other interested organizations and agencies, the proposed design, a summary of the analyses for the various design improvements determined not to be feasible, and the criteria used to select the final design. Other Department Sections or Bureaus (e.g., Land Acquisition), as necessary, may attend the public meeting to answer specific questions relative to their expertise. When a project will require minimal amounts of land from a small number of property owners (e.g., 10 or fewer) and the project is not anticipated to be controversial, contacts with individual landowners may be sufficient to address public involvement needs. See Section 19-3.01(b) for further guidance on this option.

The project study group will evaluate all comments from the public meeting and will prepare responses to these comments as appropriate. Possible responses include:

- modifying the design;
- developing and evaluating alternatives not previously given serious consideration;
- supplementing, improving, or modifying analyses;
- making factual corrections; or
- explaining why the comments do not warrant further agency response, citing the sources, authorities, or reasons which support that position and, if possible, indicating those circumstances which would trigger reappraisal or further response.

Chapter 19 discusses the requirements for public information meetings and for responding to comments received during the public meeting.

PROJECT ACTIVITY (Phase I)

Activity Title: Obtain Environmental Decision

Activity No.: 21

Responsible Unit: Environmental Unit

Activity Description:

As stated in Activity 14, most 3R projects are Categorical Exclusions (CE). For CE projects, the Environmental Unit must obtain CE approval from FHWA and/or BDE unless the project qualifies as a Group I CE; see Chapter 23.

PROJECT ACTIVITY (Phase I)

Activity Title: Prepare Final Project Report

Activity No.: 22

Responsible Unit: Project Study Group

Activity Description:

The comments received from the public and other agencies should be analyzed to determine if any changes are necessary in the draft Project Report and if any relevant issues have been overlooked. If an oversight has occurred, additional studies may be required to explain the resultant effects and determine what project design changes, if any, are necessary. After the review and analysis of comments is complete and appropriate revisions made, the final Project Report may be prepared. Activity 19 and Chapters 11 and 12 list the appropriate format, reports, and discussions that should be included in the Project Report. The final Project Rèport will also include or reference the final environmental documentation received from the Environmental Unit.

After completing all public involvement and environmental requirements, the original scaled mapping is reduced for insertion into an appendix of the Project Report. Prepare the reduced mapping sheets and other engineering exhibits on 11 in x 17 in sheets and place them in an appendix. In addition, place the aerial photography (access control plans) showing the alternatives advanced for environmental analysis and any other environmental exhibits on 11 in x 17 in sheets and place them in an appendix. The 11 in x 17 in format provides for ease of use of all final exhibits by Planning, Design, and Land Acquisition personnel.

PROJECT ACTIVITY (Phase I)

Activity Title: Obtain Design Approval

Activity No.: 23

Responsible Unit: BDE

Activity Description:

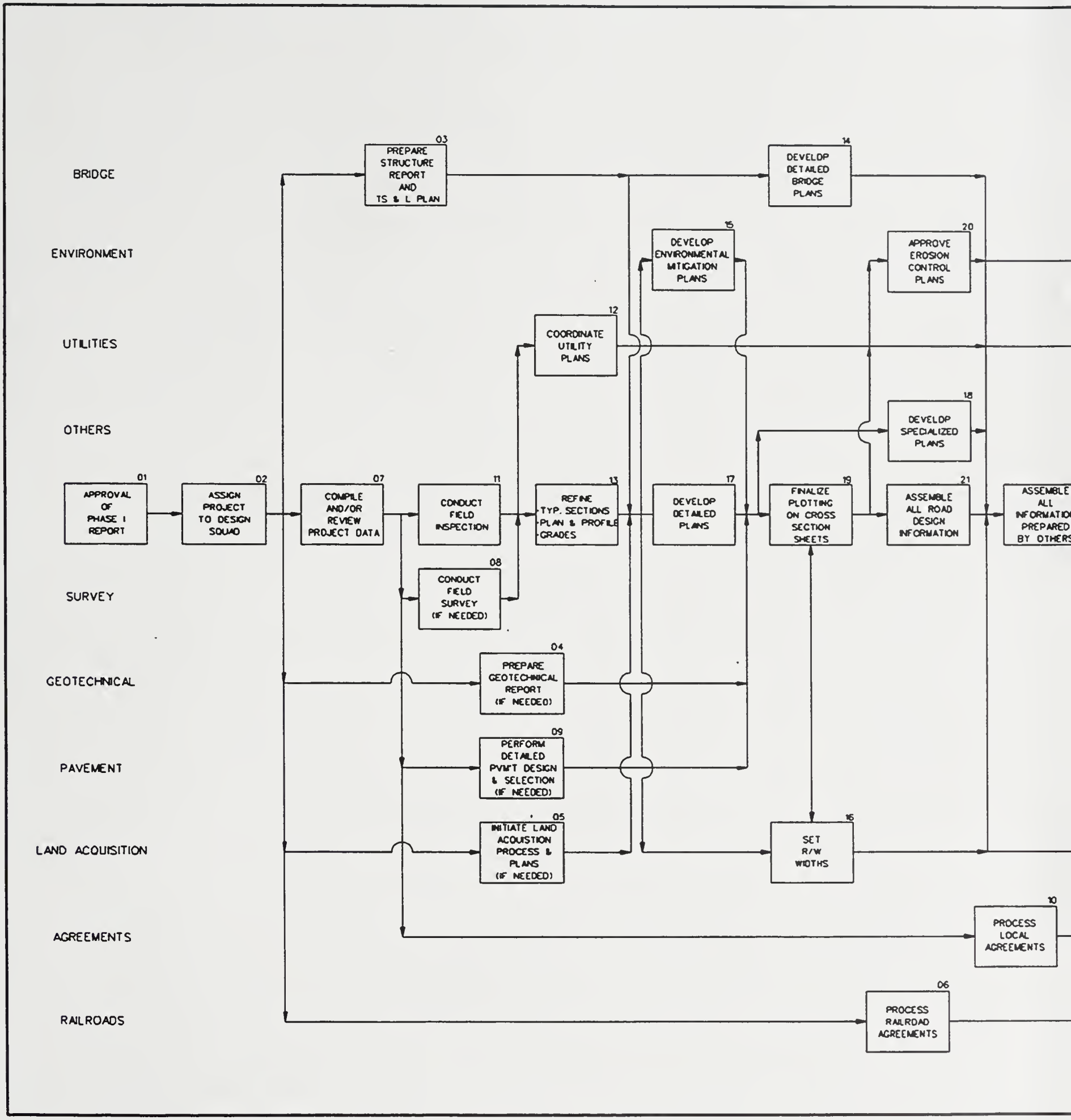
Section 12-5.05 provides information on whether the District Engineer or BDE will approve the Project Report. Generally for these types of projects, the District Engineer will approve the Project Report. If the proposed improvement requires approval by BDE, submit two copies of the report to BDE for review and approval. If the proposed improvement can be approved by the District Engineer, submit one copy of the signed report to BDE.

Before any reports can be finalized and submitted to BDE, the district must ensure:

- the applicable requirements in Part II, Project Development, and Part III, Environmental Procedures, have been met;
- public involvement activities as described in Chapter 19 have been completed;
- the environmental documentation and environmental decision have been received with the appropriate approvals;
- if applicable, coordination with FHWA has been completed; and
- all design exceptions have been approved by the BDE field engineers.

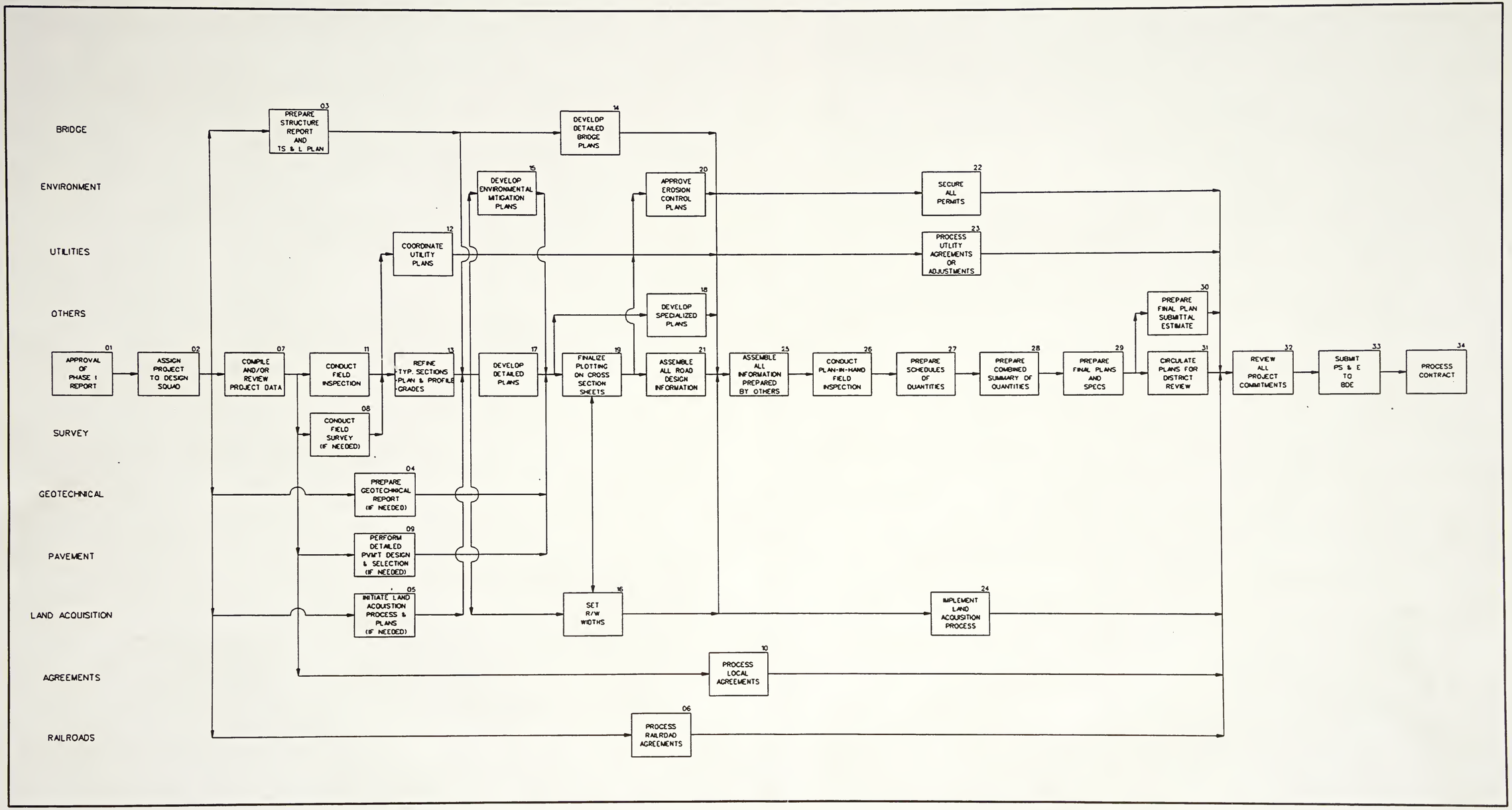
3-3.02 Phase II Design

Figure 3-3B illustrates a typical Phase II flowchart or network for a minor widening or 3R project on existing alignment. Because the design procedures are essentially the same as that for a major project on existing alignment, the activity write-ups for Figure 3-2B also apply to Figure 3-3B and are not presented here; see Section 3-2.02. However, some judgment must be used when reviewing the activities in Section 3-2.02 as not all activities or all elements of an activity may apply. For example, if the proposed pavement resurfacing thickness matches the criteria in Section 53-4.02, it will not be necessary to request the Pavement Design Section to conduct a pavement design and selection (Activity 09). As another example, it will not be necessary to prepare access control plans for these types of projects (Activity 17). Note that, to expedite the design process, some activities may have already begun during Phase I (e.g., bridge replacement designs, land acquisition).



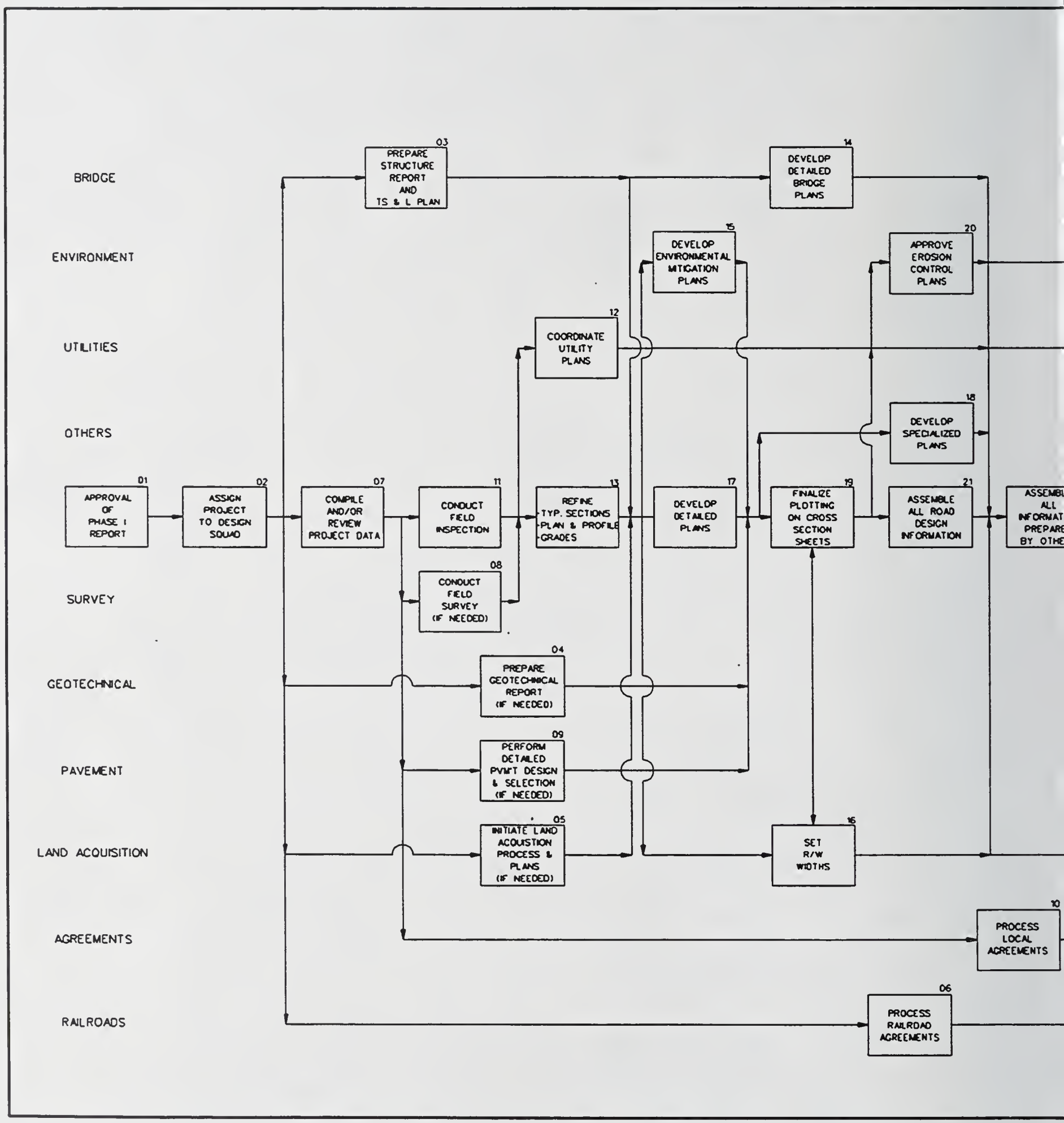
PHASE II PROJECT
(3R or Minor Widening

Fi



PHASE II PROJECT DEVELOPMENT NETWORK
(3R or Minor Widening Project on Existing Alignment)

Figure 3-3B



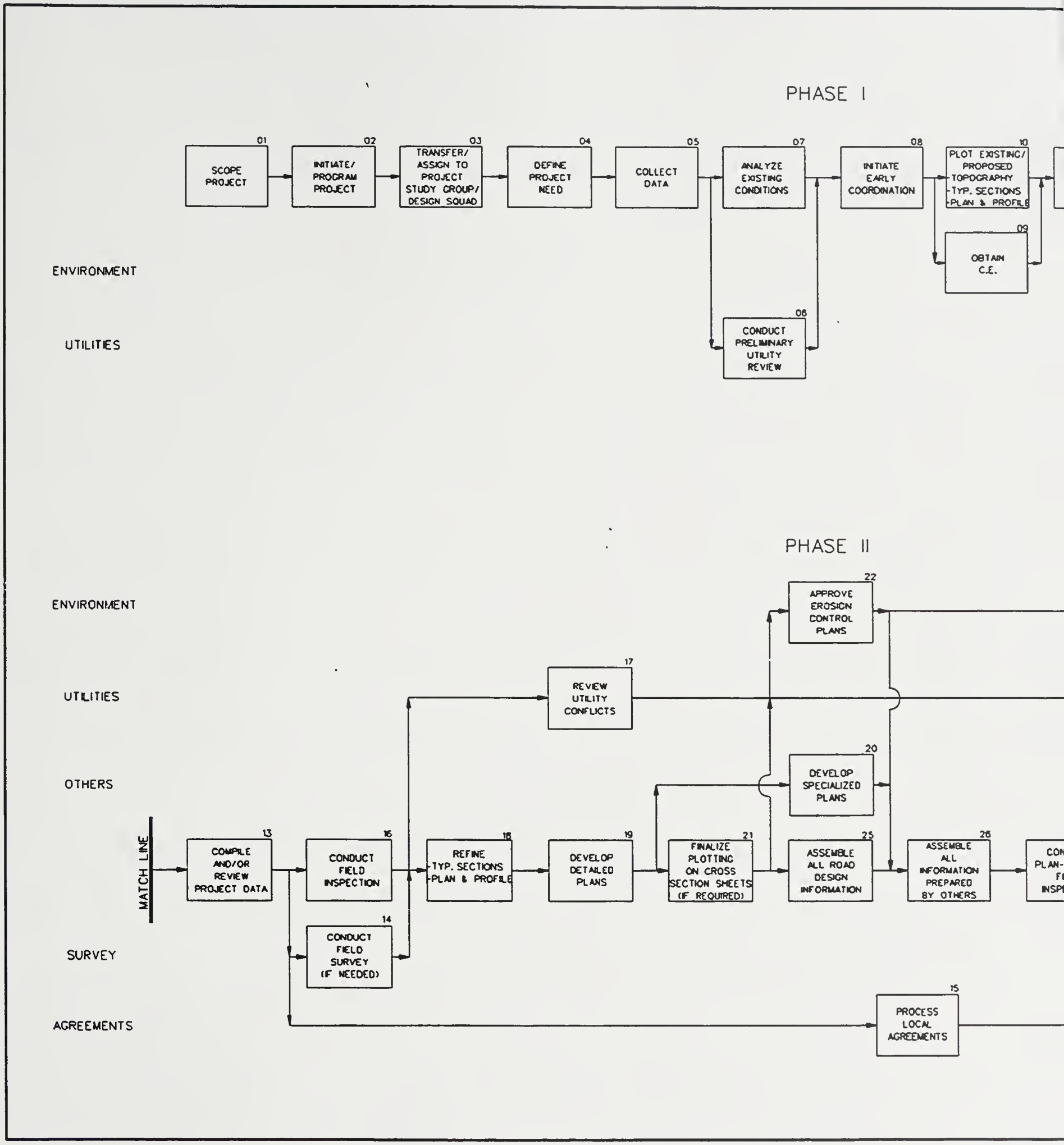
PHASE II PROJECT
(3R or Minor Widening

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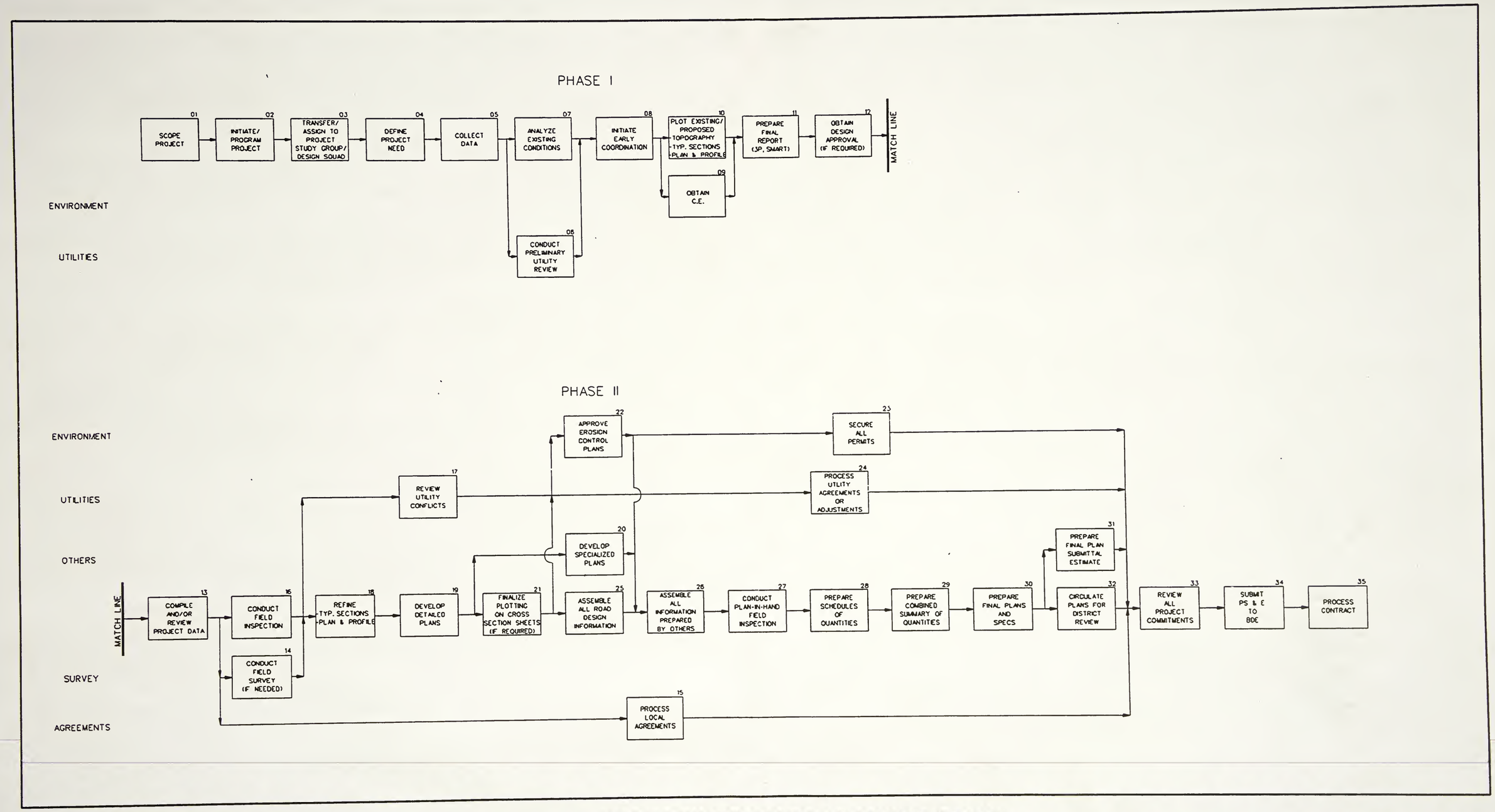
3-4 PROJECTS WITH NO RIGHT-OF-WAY ACQUISITIONS

Figure 3-4A illustrates a combined Phase I and Phase II flowchart or network for SMART, 3P, or Interstate resurfacing projects on existing alignment not requiring additional right-of-way. These projects are classified as Categorical Exclusion projects and will require a Project Report, Abbreviated Project Report, 3P Report, or SMART Report. For guidance on the preparation and format of these reports, see Chapters 11 and 12. For other project types, see the flowcharts in Chapter 2, Section 3-2, and Section 3-3. See Chapter 53 for information on SMART and 3P projects.

Following Figure 3-4A are brief write-ups for each activity. Because of the variety of the project types that apply to this flowchart, some judgment must be used because not all activities or all elements of an activity may apply. Also note that, to expedite the design process, some activities may start prior to the completion of Phase I.

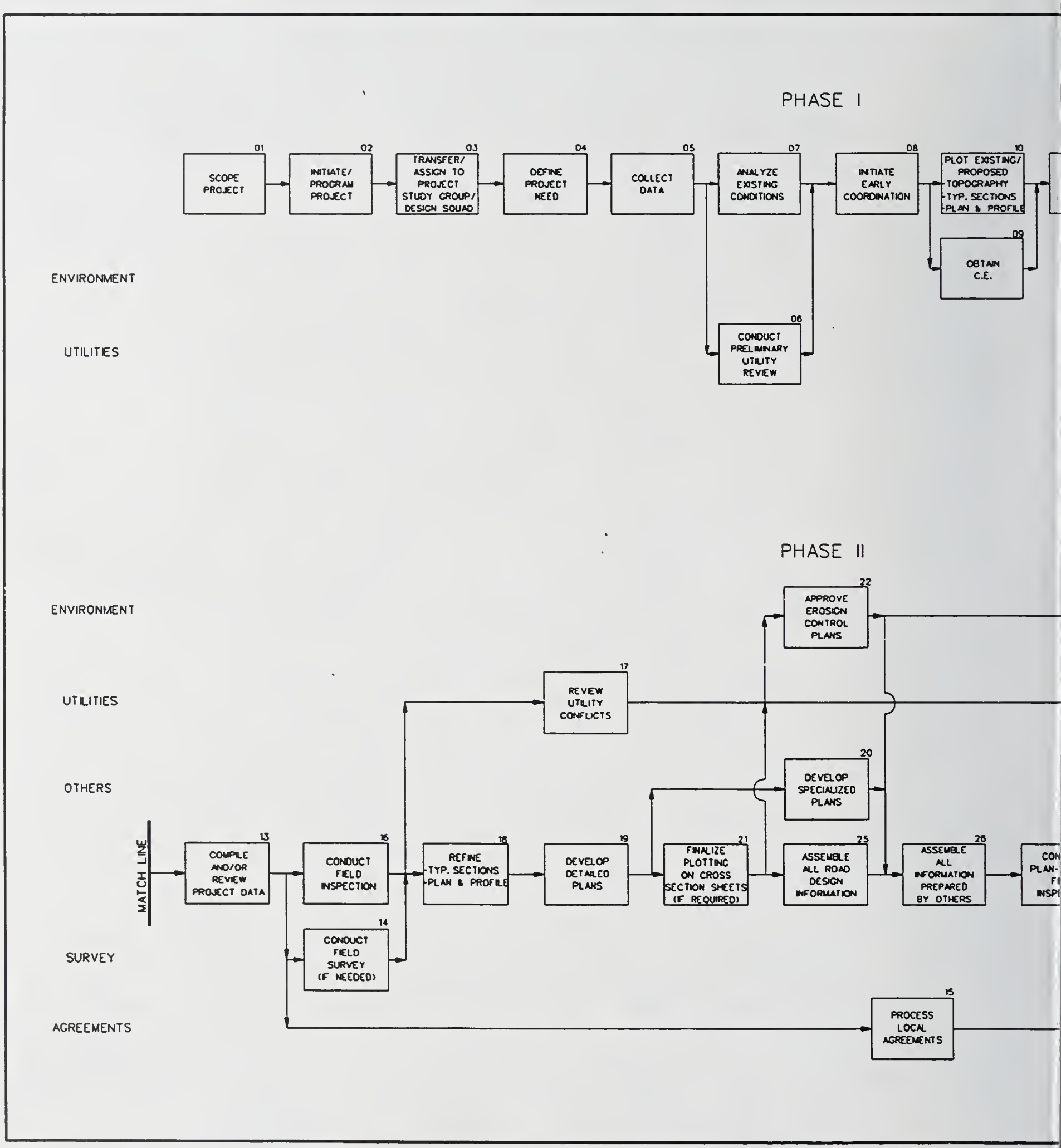


PHASE I & PHASE II PR
(Projects Re



PHASE I & PHASE II PROJECT DEVELOPMENT NETWORK
(Projects Requiring No Right-of-Way)

Figure 3-4A



PHASE I & PHASE II PI
(Projects Re

PROJECT ACTIVITY (Phase I)

Activity Title: Scope Project

Activity No.: 01

Responsible Unit: District Bureau of Program Development

Activity Description:

A roadway project proposal can originate from a variety of sources, including local officials or metropolitan planning organizations (community-based need), directly from the IDOT district office (district-based need), from a Bureau in the central office (Office of Planning and Programming, BDE, Operations, etc.), and from systems such as the Safety Management System targeting a special need or a Statewide need.

Before a project is entered onto the Department's Proposed Highway Improvement Program, the district Programming Section initially develops and documents the project concept. Developing the project concept will typically involve the following:

- establishing that there is, in fact, a need for the project;
- making a preliminary determination of the project scope of work;
- reviewing any available data and records;
- reviewing existing plans;
- conducting an initial evaluation of right-of-way, utility, and environmental impacts; and
- developing a rough, preliminary cost estimate.

This information is forwarded for review and comment to Program Development, Operations, BDE, Environmental Unit, Bridges and Structures, and other individuals, as appropriate. Programming will refine the scope based on the comments received.

Once the scope, cost, and schedule have been defined, district Programming will forward this information to the Office of Planning and Programming for incorporation into the Department's multi-year program (Activity 02).

PROJECT ACTIVITY (Phase I)

Activity Title: Initiate/Program Project

Activity No.: 02

Responsible Unit: Office of Planning and Programming

Activity Description:

Candidate projects are submitted by the districts as a request for project programming to the Office of Planning and Programming. Based on a Statewide assessment of highway improvement needs and available funds, the Office of Planning and Programming will develop the Department's Proposed Highway Improvement Program. This will establish an individual project as an active project for further development.

The Office of Planning and Programming annually issues guidelines for multi-year programming criteria. This includes programming criteria for:

- improvement categories,
- pavement surface conditions,
- deficient bridges,
- safety improvements,
- Interstate rehabilitation,
- widening narrow and deteriorated pavements,
- improving intersections and reducing traffic bottlenecks,
- new construction/reconstruction of major facilities,
- transportation enhancement projects,
- Congestion Mitigation Air Quality (CMAQ) projects, and
- bicycle accommodation.

PROJECT ACTIVITY (Phase I)

Activity Title: Transfer/Assign to Project Study Group/Design Squad

Activity No.: 03

Responsible Unit: Studies and Plans Engineer

Activity Description:

At this point the project will either be assigned to a project study group/design squad within the district Bureau of Program Development or to a consultant to begin the design study. Because of the length and type of activity for these projects, typically the same unit which conducts the Phase I study will also perform the Phase II design. The Studies and Plans Engineer will have the overall day-to-day responsibility for advancing the project through plan submittal. He/she will:

- coordinate directly with other units within the Department;
- attend all internal meetings and field inspections;
- ensure that the project study meets all Department criteria and procedures;
- report directly to the District Program Development Engineer on all significant project activities, problems, and developments; and
- participate in the public involvement process.

The number and expertise of personnel initially assigned to the project will vary with the nature and scope of the proposed improvement. The personnel assigned will also vary over time relative to the priority for completion, the available lead time, and the activity in project development under study.

PROJECT ACTIVITY (Phase I)

Activity Title: Define Project Need

Activity No.: 04

Responsible Unit: Project Studies Group/Design Squad

Activity Description:

For a transportation project, the project study group/design squad must first define the project need, which will direct the process for the identification of design alternatives, in-depth analyses and, ultimately, selection of the preferred design. This will consist of reaffirming the need for the proposed improvement, establishing project goals and objectives, and establishing the study area and logical termini. Previous studies and decisions should be reaffirmed and/or updated as necessary. Other factors that must be considered include:

- existing traffic volumes;
- crash information;
- alignment and profile deficiencies;
- structural integrity of bridges, pavements, and culverts;
- lane and shoulder widths;
- roadside safety;
- transportation demand;
- potential cost savings to the traveling public;
- programming guidelines;
- commitments to elected officials; and
- public input.

PROJECT ACTIVITY (Phase I)

Activity Title: Collect Data

Activity No.: 05

Responsible Unit: Project Study Group/Design Squad

Activity Description:

Once the project need has been identified (Activity 04), the project study group/design squad must gather and inventory information and data for the project. Environmental and engineering data, should be gathered simultaneously. The amount and type of information to be collected will vary with the nature and scope of the proposed improvement. Depending on the project type, information gathered may include:

- roadway, field, aerial, and stream surveys;
- existing roadway classifications and truck routes;
- existing as-built plans and maintenance records;
- existing highway geometrics;
- existing on-street parking;
- crash rate maps and collision diagrams;
- pavement and bridge condition reports;
- existing ROW information and any encroachments;
- ADT traffic maps and DHVs for current traffic (all affected routes);
- inventory of posted speed limits;
- detailed transportation maps and plans with all modes of travel included;
- utility installations and detailed maps from utility companies;
- hydraulics survey, drainage survey, sewer atlas, and flooding information tables;
- fire districts, mail and school bus routes, location of churches, drainage districts, historic sites, and field-tile maps;
- commercial, agricultural, industrial, recreational, historic, and residential land use;
- endangered and threatened species, wetlands in right-of-way, special waste sites, etc.;
- local, State, and Federal agency coordination needs;
- geotechnical investigations; and
- estimate of cost (see Section 11-2.15) and road-user benefits (see Section 11-7.01).

See Chapters 11 and 12 for further guidance on the information that should be collected for a Phase I study.

PROJECT ACTIVITY (Phase I)

Activity Title: Conduct Preliminary Utility Review

Activity No.: 06

Responsible Unit: Project Support Section

Activity Description:

The project study group/design squad will provide the district Project Support Section with information on the proposed project. The Project Support Section will work with the applicable utility companies to identify project impacts on existing utilities. The following items of work are typically performed:

1. Underground. The Project Support Section will coordinate with the district survey crew and will, if needed, request an underground survey to determine the depths and location of existing underground utilities within the project limits, especially fiber optic cables, water supply, and sanitary lines in urban areas.

2. Overhead. Any major above-ground utilities which may be impacted by the project. The Project Support Section may prepare a cost estimate to determine if a special effort should be exercised to avoid certain utilities.

3. Impacts. The Project Support Section will notify any utility companies which will be potentially impacted by the upcoming project, and the Section will request that the Utility contact IDOT if it plans any work in the vicinity of the project.

The Project Support Section will document its findings in a report or memorandum and submit it to the project study group/design squad. The project study group/design squad will use the information in making the final design determinations and document its findings in the final report.

For additional guidance on utility coordination, see Chapter 6.

PROJECT ACTIVITY (Phase I)

Activity Title: Analyze Existing Conditions

Activity No.: 07

Responsible Unit: Project Study Group/Design Squad

Activity Description:

Using as-built plans, aerial and/or field surveys, previously prepared reports, and data collected in Activity 05, the project study group/design squad will review and identify the following existing conditions:

- the locations of streams, railroads, and other topographic features;
- existing traffic and capacity deficiencies;
- pavement, bridge, and culvert structural integrity;
- crash information;
- alignment and profile deficiencies;
- existing lane and shoulder widths;
- existing ROW, ROW constraints, and encroachments;
- roadside safety concerns;
- existing and planned land uses from local governments, MPOs, fire districts, schools, etc.;
- existing agreements with utilities, railroads, local agencies, etc;
- existing drainage patterns and drainage systems;
- sensitive noise receptors;
- wetlands in the right-of-way;
- special waste sites; and
- tree and vegetation inventory.

PROJECT ACTIVITY (Phase I)

Activity Title: Initiate Early Coordination

Activity No.: 08

Responsible Unit: Project Study Group/Design Squad

Activity Description:

Coordination with other Department and governmental agencies, as appropriate, is an important aspect during the design study process. This coordination should begin as early as practical in project planning.

At this stage of the design study process, the project study group/design squad will initiate early coordination with other Department Units or Bureaus and governmental agencies (e.g., Environmental, FHWA, Land Acquisition, Construction, Operations, Bridges and Structures, Utilities) that have an interest in the project or have information or expertise concerning any issues the project may involve. The purpose of this coordination will be to assist in the identification of reasonable design alternatives and in gathering information to evaluate the engineering and environmental impacts of the proposed project and possible impact mitigation measures. This coordination should begin as early as practical. Early coordination will also identify the cooperating agencies.

Also, if applicable, this Activity should allow the public an opportunity for input and comment on the project. Typically, this will consist of informational letters, advertisements, and/or meetings with local government officials, fire districts, school districts, drainage districts, historic commissions, MPOs, residents, businesses, etc. These meetings or letters may include:

- advising local, State, and Federal officials that a project has been initiated and that a study is underway;
- procedures for developing possible coordination and public service involvement;
- a discussion on the project scope;
- a request for information (e.g., MPO plans, drainage problems, transit needs);
- a discussion with businesses, railroads, and utility companies; and
- talking with individuals about individual concerns.

Public coordination must be continuous throughout the project development. For guidance on public coordination, see Chapter 19.

PROJECT ACTIVITY (Phase I)

Activity Title: Obtain CE

Activity No.: 09

Responsible Unit: Environmental Unit

Activity Description:

Once the type of design improvements have been identified (Activity 04), analyzed (Activity 07), and the early coordination initiated (Activity 08), the district Environmental Unit will initiate the environmental process. Typically, these projects will be Categorical Exclusions (see Chapter 23).

This Activity will include:

- assigning a team to the project;
- discussing the project at a district coordination meeting, as appropriate, which may include obtaining FHWA concurrence, if necessary, in the appropriateness of the proposed environmental processing type;
- assembling and analyzing information on any potential environmental effects;
- determining and evaluating alternatives;
- preparing the appropriate environmental documentation;
- coordinating the environmental documentation for review, as appropriate; and
- obtaining/documenting the environmental decision.

PROJECT ACTIVITY (Phase I)

Activity Title: Plot Existing/Proposed Topography, Typical Sections, Plan and Profile

Activity No.: 10

Responsible Unit: Project Study Group/Design Squad

Activity Description:

For this Activity, conduct the following:

- If not already done, plot the existing topography including property lines, property owners names, names of roads, driveways/access roads, and all other important geographic and cultural features.
- Plot existing horizontal and vertical alignments and cross sections.
- Determine the proposed typical sections.
- Determine the rough quantities for the proposed design and refine the cost estimate. If no quantities are available, use a generalized cost (e.g., cost per mile (kilometer)); see Sections 12-4 and 65-1.02.

PROJECT ACTIVITY (Phase I)

Activity Title: Prepare Final Report

Activity No.: 11

Responsible Unit: Project Study Group/Design Squad

Activity Description:

Once the analyses have been conducted and the information gathered, the project study group/design squad will prepare the final report. The type of report will depend on the project type; see Chapter 12, which also presents the format that should be used when preparing these reports.

The final report should include:

- approval form;
- a summary of need and location of the project;
- description of the proposed improvements;
- a summary of the environmental sign-offs obtained;
- the results of public involvement;
- a list of commitments made to the public, Federal and local agencies, etc.;
- the estimate of costs;
- exhibits showing typical sections, etc.; and
- copies of analyses and other reports conducted during the design study, including any environmental sign-offs, if applicable.

PROJECT ACTIVITY (Phase I)

Activity Title: Obtain Design Approval

Activity No.: 12

Responsible Unit: BDE

Activity Description:

Section 12-5.05 provides information on whether the District Engineer or BDE will approve the final report (Activity 11). Generally for these types of projects, the District Engineer will approve the Report. If the proposed improvement requires approval by BDE, submit two copies of the Report to BDE for review and approval. If the proposed improvement can be approved by the District Engineer, submit one copy of the signed report to BDE.

Before any reports can be finalized and submitted to BDE, the district must ensure:

- the applicable requirements in Part II, Project Development, and Part III, Environmental Procedures, have been met;
- if applicable, public involvement activities as described in Chapter 19 have been completed;
- the environmental documentation has been reviewed and the environmental decision obtained/documented;
- if applicable, coordination with FHWA has been completed; and
- all design exceptions have been approved by the BDE field engineers.

PROJECT ACTIVITY (Phase II)

Activity Title: Compile and/or Review Project Data

Activity No.: 13

Responsible Unit: Design Squad/Project Study Group

Activity Description:

This Activity begins Phase II. The design squad/project study group should review the Phase I report and project files to become familiar with the decisions and determinations made during Phase I. Some of the information and decisions that should be reviewed may include:

- typical sections developed during Phase I,
- any technical reports prepared for the Phase I study,
- crash and traffic data,
- aerial/field surveys,
- the commitment file,
- any utility involvement, and
- any railroad involvement.

Based on this review, the design squad/project study group should evaluate what additional information and coordination with other units may be required to complete the project. At this stage of the project, the design squad/project study group should request:

- if necessary, the Surveys and Photo Services Unit to conduct additional surveys (Activity 14); and
- the Project Support Section to begin processing any necessary local agency agreements (Activity 15).

PROJECT ACTIVITY (Phase II)

Activity Title: Conduct Field Survey (If Needed)

Activity No.: 14

Responsible Unit: Surveys and Photo Services Unit

Activity Description:

In general, a survey should have been conducted during the development of the Phase I study. However, based on the review of the project data (Activity 13), the design squad/project study group may conclude that additional surveys are required. The needed survey information may include:

- existing field conditions (topography, vegetation, existing structures and road design features, etc.);
- drainage features (bodies of water, open channels, channel slopes and cross sections, existing drainage appurtenances, etc.);
- existing field landmarks;
- existing utilities (above and below ground);
- existing right-of-way markers and property lines; and
- alignment and cross section of existing roads and driveways.

PROJECT ACTIVITY (Phase II)

Activity Title: Process Local Agreements

Activity No.: 15

Responsible Unit: Project Support Section

Activity Description:

The district Project Support Section is responsible for the preparation and negotiation of formal agreements between the Department and local governments. These agreements may cover:

- division of work and expense involved between IDOT and the local agency in connection with the improvement,
- responsibilities for the future maintenance of the improvement,
- reimbursement of the costs incurred by the local agency,
- coverage of liability during construction operations, and
- reference to or identification of plans and plan approval.

The Project Support Section also will be responsible for coordinating the transfer of information and plans between the design squad/project study group and the local agency. This will be a continuous process throughout the design phase as the design plans are developed. The district Project Support Section also will coordinate with BDE for review and approval of any agreements. This process should be completed prior to the review of all project commitments (Activity 33).

For additional guidance on coordinating with local agencies, see Chapter 5.

PROJECT ACTIVITY (Phase II)

Activity Title: Conduct Field Inspection

Activity No.: 16

Responsible Unit: Design Squad/Project Study Group

Activity Description:

After completing the in-house review of the Phase I report and other project data, the design squad/project study group should conduct a field inspection of the project. The objective is to review major design features and project-related issues and to identify any potential problems. The design squad/project study group will arrange the field inspection and invite, as appropriate, individuals from the following units to the field inspection:

- district Bureau of Project Implementation,
- BDE,
- Bureau of Bridges and Structures,
- district Environmental Unit,
- district Bureau of Operations,
- district Geotechnical Unit,
- FHWA,
- local officials, and
- others as deemed appropriate.

The design squad/project study group will document the findings and decisions in the minutes of the field inspection.

PROJECT ACTIVITY (Phase II)

Activity Title: Review Utility Conflicts

Activity No.: 17

Responsible Unit: Project Support Section

Activity Description:

After conducting the field inspection (Activity 16) and any additional field surveys (Activity 14), the design squad/project study group will forward the preliminary construction plans with any known utilities plotted to the district Project Support Section. The Project Support Section will coordinate the transfer of information and plans between the design squad/project study group and the utility companies. The utility companies will review IDOT's plans, plot their facilities if not already shown, and determine any necessary utility adjustments/relocations. As the design squad/project study group refines the construction plans, this information will be submitted to the Project Support Section to be forwarded to the utility companies.

For guidance on preparing utility plans and coordinating with utility companies, see Chapter 6.

PROJECT ACTIVITY (Phase II)

Activity Title: Refine Typical Sections, Plan and Profiles

Activity No.: 18

Responsible Unit: Design Squad/Project Study Group

Activity Description:

Based on the review of the plans (Activity 13), the field inspection (Activity 16), the field survey (Activity 14), the Phase I report, and the project's commitment file, the design squad/project study group will refine and/or prepare the project's:

- cover sheet;
- general notes sheet;
- typical sections; and
- the plan and profile sheets.

Section 63-4 provides guidance on the information that should be included on these plan sheets.

PROJECT ACTIVITY (Phase II)

Activity Title: Develop Detailed Plans

Activity No.: 19

Responsible Unit: Design Squad/Project Study Group

Activity Description:

The design squad/project study group will prepare the detailed sheets which will be incorporated into the construction plans. This may include the following:

- traffic control sheets;
- drainage sheets, including special drainage details;
- intersection details;
- pavement marking details;
- transition details;
- proposed cross sections, not including pavement template;
- signing plans, if not prepared by the district Bureau of Operations;
- highway lighting plans, if not prepared by others; and
- any other special details.

Section 63-4 presents guidance on what information should be included on each detail or plan sheet.

In addition, the design squad/project study group will:

- determine the proposed TMA for the project;
- determine the need for construction permits and/or temporary easements;
- perform a roadside safety analysis; and
- incorporate any special experimental features into the plans.

PROJECT ACTIVITY (Phase II)

Activity Title: Develop Specialized Plans

Activity No.: 20

Responsible Unit: Various Units

Activity Description:

Based on the typical sections, plan and profile sheets (Activity 18) and detailed plan sheets (Activity 19), various other units within IDOT will prepare their applicable plan sheets, quantities, and special provisions. This may include:

- district Bureau of Operations preparing the landscaping details;
- district Bureau of Operations preparing the signing plans, if included within the project;
- district Bureau of Operations (or Bureau of Electrical Operations in District 1) preparing the traffic signal plans; and/or
- BDE (or Bureau of Electrical Operations in District 1) preparing the highway lighting plans.

In addition, the following units may review the detailed plans prepared by the design squad/project study group (Activity 19):

- district Bureau of Operations will review the pavement marking details and traffic control plans, and/or
- district Bureau of Project Implementation will review the traffic control plans.

PROJECT ACTIVITY (Phase II)

Activity Title: Finalize Plotting on Cross Sections

Activity No.: 21

Responsible Unit: Design Squad/Project Study Group

Activity Description:

During Phase I, the cross sections may have been generated using GEOPAK to determine the initial quantities. Using the following information, update and plot the revised cross sections:

- information received from the Project Support Section on utility plans (Activity 06);
- the refined typical sections and plan and profile sheets (Activity 18); and
- the detailed plans (Activity 19).

Also during Activity 21, develop the erosion control plans and specifications according to the criteria in Chapter 59 and the information provided in the Phase I report. These plans and specifications will be submitted to the Environmental Unit for review and approval (Activity 22).

PROJECT ACTIVITY (Phase II)

Activity Title: Approve Erosion Control Plans

Activity No.: 22

Responsible Unit: Environmental Unit

Activity Description:

The Environmental Unit will review and approve the erosion control plans and specifications prepared by the design squad/project study group (Activity 21). Once approval has been granted, the erosion control plans will be incorporated into the construction plans (Activity 26). Also, once the erosion control plans have been approved, the Environmental Unit can initiate the process of securing the necessary project permits (Activity 23).

PROJECT ACTIVITY (Phase II)

Activity Title: Secure All Permits

Activity No.: 23

Responsible Unit: Environmental Unit

Activity Description:

After the cross sections have been finalized, the erosion control plans have been completed (Activity 21) and approved (Activity 22), and the typical sections and plan and profiles sheets have been completed (Activity 18), the Environmental Unit will ensure all applicable permits and approvals required by the project are obtained. Depending upon the project-specific impacts, this may include any or all of the following:

- Section 401 water quality certification and Section 402 permit (NPDES) from the Illinois Environmental Protection Agency;
- US Army Corps of Engineers, Section 404/Section 10 permit(s); and
- permits issued by Illinois State agencies.

All permits, certifications, and approvals should be received by the Department prior to the review of all project commitments (Activity 33).

Chapter 28 provides a brief description of all Federal and State environmental permits and certifications.

PROJECT ACTIVITY (Phase II)

Activity Title: Process Utility Agreements or Adjustments

Activity No.: 24

Responsible Unit: Project Support Section

Activity Description:

Based on the roadway plans (Activities 18, 19, and 21), the Project Support Section will work with the impacted utility companies and municipalities to implement the utility process. This process may include the following:

1. Plan Preparation. The utility companies are responsible for preparing all utility adjustment/relocation plans. The plans will be developed according to the criteria in Chapter 6.

2. Funding. Depending on the right-of-way ownership for existing and proposed utility locations, transportation funds may be eligible for utility adjustments/relocations required by the highway project; see Chapter 6. The Utilities pay for all betterments.

3. Agreements. The Project Support Section will prepare a Utility Agreement for each affected utility and will work with the utility companies to gain their input and approval. The Project Support Section will coordinate with BDE for review and approval of the agreements.

The Project Support Section will ensure that the utility process is completed before the review of all project commitments (Activity 33).

PROJECT ACTIVITY (Phase II)

Activity Title: Assemble All Road Design Information

Activity No.: 25

Responsible Unit: Design Squad/Project Study Group

Activity Description:

Throughout the design process, the design squad/project study group will have prepared the various plan sheets separately. In Activity 25, conduct the following:

- plot a complete set of plans developed to date (e.g., cover sheet, typical plans, plan and profile sheets, detail plans, cross sections);
- assemble the sheets in the recommended order as noted in Chapter 63;
- review the plans and details to ensure that all necessary information has been included and that the plans and details are compatible with each other;
- calculate the quantities for roadway design elements according to the criteria in Chapter 64 of the *BDE Manual*, the *Coded Pay Items*, and the *Standard Specifications for Road and Bridge Construction* for pay items, units of measurement, rounding conventions, etc.; and
- prepare all required special provisions.

At this time the Schedules of Quantities and the Summary of Quantities will not yet be prepared. For assembly purposes, blank Schedule of Quantities and Summary of Quantities may be included.

PROJECT ACTIVITY (Phase II)

Activity Title: Assemble All Information Prepared by Others

Activity No.: 26

Responsible Unit: Design Squad/Project Study Group

Activity Description:

Depending on the project, the design squad/project study group will have received the following completed plans, special provisions, pay items, and quantities from other IDOT units:

- the landscaping details from the district Bureau of Operations (Activity 20);
- the signing plans from the district Bureau of Operations (Activity 20);
- the traffic signal plans from the district Bureau of Operations (or Bureau of Electrical Operations in District 1) (Activity 20); and
- the highway lighting plans from BDE (or Bureau of Electrical Operations in District 1) (Activity 20).

In addition, the design squad/project study group will have received approval of the erosion control plans from the Environmental Unit (Activity 22).

The design squad/project study group will review these materials 1) to identify and incorporate any information which must be incorporated directly into the detailed road design plans, and 2) to assemble those plan sheets prepared by others into the overall set of construction plans.

PROJECT ACTIVITY (Phase II)

Activity Title: Conduct Plan-in-Hand Field Inspection

Activity No.: 27

Responsible Unit: Design Squad/Project Study Group

Activity Description:

At this stage of project development, all major design work has been completed, including roadway design, traffic items, erosion control plans, etc. The design squad/project study group is responsible for scheduling the Plan-in-Hand (PIH) review of the project. The PIH review is an in-depth office and on-site review of all project elements to ensure that all details and commitments have been satisfactorily incorporated into the construction plans and specifications, and that the project is nearly ready to advance to construction.

As applicable, the design squad/project study group will invite the following to conduct an office and PIH field inspection:

- district Bureau of Project Implementation,
- BDE,
- district Bureau of Operations,
- FHWA,
- local officials, and
- others as deemed appropriate.

Once the PIH office and field inspection have been completed, the design squad/project study group will prepare the PIH minutes to document all significant decisions made during the PIH review. After approval by the Program Development Engineer, distribute the PIH minutes to:

- all applicable Bureau Chiefs;
- District Engineer;
- all parties involved in the field review;
- FHWA, if applicable; and
- any other individuals or sections as deemed appropriate.

All parties receiving a copy of the PIH minutes are requested to provide comments on the minutes. Concurrence of the minutes will be assumed if no comments are received by the specified date.

PROJECT ACTIVITY (Phase II)

Activity Title: Prepare Schedules of Quantities

Activity No.: 28

Responsible Unit: Design Squad/Project Study Group

Activity Description:

Based on any modifications due to the Plan-in-Hand field inspection (Activity 27), the design squad/project study group will refine the project quantities for the roadway design items developed during Activity 25. Using these quantities and those provided by other IDOT units (Activity 26), the design squad/project study group will prepare the Schedule of Quantities sheets according to the criteria presented in Chapter 64. These quantities will be incorporated onto the Summary of Quantities Sheet (Activity 29).

PROJECT ACTIVITY (Phase II)

Activity Title: Prepare Combined Summary of Quantities

Activity No.: 29

Responsible Unit: Design Squad/Project Study Group

Activity Description:

Using the quantities developed in Activity 25, refined in Activity 28, and those provided by other IDOT units (Activity 26), the design squad/project study group will prepare the Summary of Quantities sheets, which will summarize all pay items necessary to construct the improvement. It also should include the applicable construction and safety code items, pay item code numbers, units of measurement, total quantities, and quantity breakdown for each section. One or more summary sheets typically will be included in each set of plans. Do not show other data on the summary sheets (e.g., general notes). When preparing the Summary of Quantities sheets, it is important that all quantities be calculated and segregated accordingly prior to completing the Summary of Quantities.

The design squad should coordinate with the Project Support Section to ensure that the percentages and cost breakdown in the Summary of Quantities and the Local Agency agreements are identical.

For additional guidance on preparing the Summary of Quantities, see Section 63-4.

PROJECT ACTIVITY (Phase II)

Activity Title: Prepare Final Plans and Specifications

Activity No.: 30

Responsible Unit: Design Squad/Project Study Group/Others

Activity Description:

Based on the Plan-in-Hand Review and minutes (Activity 27), all bureaus and sections responsible for their respective project plans will make all necessary plan and specifications revisions. This will produce the final set of project plans ready for construction. Specifically for the design squad/project study group, the design squad/project study group will be responsible for revising the roadway plans and specifications. Once completed, the plans will be distributed for district review (Activity 32) and will allow the District Estimating Engineer to prepare the Final Plan Submittal Estimate.

Complete quality control/quality assurance (QC/QA) prior to the plans being circulated for district review.

PROJECT ACTIVITY (Phase II)

Activity Title: Prepare Final Plan Submittal Estimate

Activity No.: 31

Responsible Unit: District Estimating Engineer

Activity Description:

Based on the information from the final plans and specifications (Activity 30), the District Estimating Engineer will prepare the final district cost estimate. This may be a new estimate or an update of an earlier cost estimate prepared during Phase I or a revised cost estimate prepared during Phase II. This estimate will be submitted to the BDE Project Management Unit, which will use it to develop the Engineer's Estimate.

Chapter 65 provides guidance on the preparation of project cost estimates.

PROJECT ACTIVITY (Phase II)

Activity Title: Circulate Plans for District Review

Activity No.: 32

Responsible Unit: Design Squad/Project Study Group

Activity Description:

Once all revisions from the Plan-in-Hand Review and minutes have been made to the plans and specifications (Activity 30), the design squad/project study group will submit a completed set of construction plans to the district units involved with the project for final review and comment. Typically, this review will consist of:

- reviewing the plans to ensure the reviewer's comments from previous reviews have been incorporated;
- ensuring that the changes do not conflict with the bureau's commitments; and
- ensuring that the plans conform to the Department's design criteria.

If changes are requested at this point which are desirable, but not mandatory, the Studies and Plans Engineer will determine if they should be incorporated. This will depend on other factors which may preclude the changes from being added to the plans. If another bureau determines the changes still should be incorporated, an appeal can be made to the Program Development Engineer for their incorporation.

PROJECT ACTIVITY (Phase II)

Activity Title: Review all Project Commitments

Activity No.: 33

Responsible Unit: Design Squad/Project Study Group

Activity Description:

At this point in project development, the project design is essentially complete. The design squad/project study group must ensure that the following elements have been completed and/or have been incorporated into the plans:

- all environmental permits have been secured (Activity 23);
- all utility agreements and adjustments have been processed and signed (Activity 24);
- the final district cost estimate has been completed (Activity 31);
- all local agreements and letters of understanding have been processed and signed (Activity 15); and
- all commitments made during the project development, including those made during Phases I and II, have been incorporated.

The design squad/project study group must carefully review all minutes of meetings and the project study files to ensure that all commitments have been incorporated. If there are any questions, the design squad/project study group should contact the preparer of the Phase I report or the Unit making the commitment during Phase II.

If it is discovered during the plan development that a change is required to the approved Phase I report or a commitment cannot be met, the design squad/project study group must immediately notify BDE and all other applicable units so that the appropriate action can be taken. Failure to provide the appropriate notification and review may result in project delay.

PROJECT ACTIVITY (Phase II)

Activity Title: Submit PS & E to BDE

Activity No.: 34

Responsible Unit: Design Squad/Project Study Group

Activity Description:

Once the plans are complete and the design squad/project study group has ensured all commitments, agreements, permits, etc., are complete or have been incorporated, the design squad/project study group will submit the following items to the BDE Program Support Unit:

- the Certification Acceptance/Project Status Form, signed by the District Engineer;
- a cover sheet signed by the District Engineer indicating his/her approval of the plans;
- one complete set of plans on reproducible paper, mylar, or vellum (see Chapter 63 for the Department's guidelines on preparing plan sheets);
- one copy of each special provision required for the project, including a copy of the electronic file in Microsoft Word format (see Section 66-1.04 for the procedures on developing special provisions);
- a completed Recurring Special Provision check sheet (see Chapter 66);
- the project quantities on Form BD-213 or BDE approved equal (see Chapter 64 for the procedures on determining plan quantities);
- the expected construction time for the project (see Section 66-2.03 for the Department's guidelines on determining the expected construction time); and
- copies or originals of all permits and agreements.

To place an improvement on any specific letting, it is imperative that the plans and supporting documents be submitted according to the schedules established in Section 66-2 which indicate the minimum number of weeks prior to the letting date for the submittal or completion of a particular phase of work.

PROJECT ACTIVITY (Phase II)

Activity Title: Process Contract

Activity No.: 35

Responsible Unit: BDE

Activity Description:

Once BDE has received the plans and other information from the district (Activity 34), it will conduct the following:

- prepare the Engineer's Estimate;
- verify that the plans are on the list of recommended projects;
- check the Certification Acceptance/Project Status Form;
- verify the project is programmed and the scope of work is correct;
- determine the final funding source;
- check all agreements to ensure they are consistent with the project;
- submit the plans, special provisions, quantities, etc., for review and comment;
- prepare the Transportation Bulletin and advertise the project;
- if necessary, submit the PS & E to FHWA for approval;
- prepare the contract proposal;
- submit the proposal and plans to bidders;
- implement the letting process;
- review all bids; and
- execute the contract.

For additional guidance on the contract process, see Chapter 66.

Chapter Four

COORDINATION RESPONSIBILITIES

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

Chapter Four
COORDINATION RESPONSIBILITIES

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CHAPTER FOUR
COORDINATION RESPONSIBILITIES

4-1 INTRODUCTION

Chapter 4 discusses the various coordination activities that occur during project development. The chapter identifies which functional unit within the Department is responsible for various project activities. Several other *Manual* chapters discuss project coordination within different contexts:

- Chapter 1 presents the responsibilities of selected functional units within IDOT's organization.
- Chapters 2 and 3 present project development networks for several project types that describe, sequentially, the project activities.
- Chapters 5, 6, and 7 discuss coordination with local governments, utilities, and railroads.
- Chapters 11 – 15 discuss coordination for several studies that may be prepared during Phase I.
- Chapter 19 discusses coordination with the public on project input, and it discusses district coordination meetings.
- Chapter 22 discusses coordination during implementation of the environmental process.

This chapter has been prepared from the perspective of a district office. For the coordination discussion for Phase I (Section 4-2.01), the "project study group" is responsible for project implementation. For Phase II, the term "designer" is generic and refers to any project manager from the district; i.e., the designer is assumed to have responsibility for the indicated actions.

Chapter 4 presents a generic discussion of the approximate sequence of events that lead to the preparation of a set of construction plans, specifications, and cost estimate. Where applicable, it provides references to other *Manual* chapters.

4-2 FUNCTIONAL RESPONSIBILITIES

Project development typically requires the completion of many functional work tasks. This Section briefly identifies which unit(s) is responsible for the elements within each significant functional responsibility.

Section 4-2.01 summarizes the coordination responsibilities during the Phase I portion of project development. The remainder of Section 4-2 is primarily within the context of coordination responsibilities during the Phase II portion.

4-2.01 Phase I Coordination

Reference: Chapters 2, 3, 11, 12, and 19, and Part III

4-2.01(a) General

The project study group or a consultant usually prepares Phase I reports. The district requests design approval from the Project Development Unit in the Bureau of Design and Environment.

4-2.01(b) Environment

The project study group must coordinate closely with the district Environment Unit. The district Environment Unit must coordinate closely with the Environment Section within BDE throughout the development of the Phase I study to ensure that the project engineering analyses are consistent with the necessary project environmental analyses.

4-2.01(c) Public Involvement/Early Coordination

The project study group and district Environment Unit must coordinate during Phase I to fulfill the public involvement requirements and the early coordination requirements with other Department and governmental agencies.

4-2.01(d) Governmental Coordination

The project study group must coordinate with the necessary Department, State and Federal agencies to gather the necessary data for project evaluation (e.g., traffic, crashes, land-use plans, urban area transportation studies).

4-2.01(e) Engineering Coordination

The project study group must coordinate with the applicable Department units to perform the engineering analyses necessary for a Phase I level of study, including:

- hydrology/hydraulics (district Hydraulics Unit and/or the Bureau of Bridges and Structures),
- geotechnical and soils (district Geotechnical Unit),
- structure sketches for major structures (Bureau of Bridges and Structures),
- utilities (district Project Support Section),
- detours (Detour Committee),
- local agencies (district Project Support Section),
- aerial surveys (Aerial Survey Section and district Survey Unit), and
- bicycle/pedestrian impacts (Bicycle and Pedestrian Coordinator).

4-2.02 Agreements

Reference: Chapters 5 through 7

1. The designer initiates action for the preparation of the following agreements:

   a. Utility — Agreements Unit or Project Support Section
   b. Railroads — Agreements Unit or Project Support Section
   c. Local — Agreements Unit or Project Support Section

2. Because agreements often require considerable time to prepare and process, especially railroad agreements, work should be initiated as early as possible.

4-2.03 Bridge Design

Reference: Chapter 39

1. The bridge design process is initiated during the Phase I study, and the Phase I report will incorporate information from the Bridge Condition Report prepared by the district Bridge Engineer and approved by the Bureau of Bridges and Structures.

2. The designer must determine if bridge hydraulics are required for bridge design and initiate action.

3. The designer requests that TS&L drawings be prepared in Phase II by the Bureau of Bridges and Structures or by a consultant for any structures located within the project limits. Base information should be collected and summarized as early as possible.

4. The roadway designer performs the approach work, including guardrail-to-bridge-rail transitions; the bridge designer performs the structural design.

5. The Bureau of Bridges and Structures prepares all necessary PS&E elements for in-house designed structural items, including construction plans, special provisions, quantities, and cost estimates. The Bureau of Bridges and Structures will incorporate final structure plans and special provisions into the final contract once the plans are submitted to the Central Office.

6. Minor work on existing bridges is incorporated into the plans by the roadway designer (e.g., minor deck repairs, patching); however, work must be approved by the Bureau of Bridges and Structures.

4-2.04 Bridge Deck Rehabilitation

Reference: Chapter 39

1. Other than minor repairs, the Bureau of Bridges and Structures usually performs all bridge deck rehabilitation work.

2. The designer must coordinate with the District Bridge Maintenance Engineer.

4-2.05 Hydraulics

Reference: Chapters 39 and 40

1. The designer must coordinate work with the district Hydraulics Engineer and/or the Bureau of Bridges and Structures in the Central Office.

2. The designer will request maintenance and flood records for the location.

3. The designer and Hydraulic Engineer will decide the necessary surveying along the channel.

4-2.06 CADD Usage

Reference: Chapter 63

Except for very simple project designs, most projects will use CADD.

4-2.07 Commitment File

Reference: Chapters 11 and 12

1. This file is usually initiated during Phase I by the project study group and should be transferred to the designer when he/she receives the approved Phase I report.

2. This file may contain commitments to/for:

   - right-of-way;
   - cities, towns, villages, counties, or townships;
   - other agencies (State, Federal);
   - traffic operations;
   - driveways and entrances;
   - shared costs;
   - environmental issues; and
   - other issues requiring special attention.

3. The designer adds commitments to the file which were made during the project development.

4. The designer must document the transfer of this file to the district Bureau of Project Implementation.

4-2.08 Coordination with Bureau of Operations (Maintenance)

Reference: None

1. The project study group should contact the district Bureau of Operations early in the project development.

2. Operations should be involved in the development of the Phase I report (e.g., snowdrifting, drainage problems, pavement deterioration).

3. Operations should be invited to all patching surveys.

4. The designer should continuously coordinate with Operations during project study and design, especially for drainage facilities.

5. The designer should invite Operations to the Plan-in-Hand Field Inspection.

4-2.09 Field Surveys

Reference: *BDE Survey Manual*

1. Surveying is located in the Bureau of Programming in District 1 and in the Bureau of Program Development in all other districts.

2. The survey typically is requested by the designer during the development of the Phase I report, or topographic data may be obtained from available mapping.

3. The designer may need to request additional surveys for bridge hydraulics, roadway drainage, entrance information, location of utilities, etc.

4. The designer may need to schedule additional field checks to determine surveying needs.

4-2.10 Roadway Drainage

Reference: Chapter 40

1. Large and/or complex structures are designed by the Bureau of Bridges and Structures or consultants.

2. For hydraulic design or procedural questions, the district Hydraulics Engineer should be contacted initially.

3. The designer determines designs for open channels (ditches) and closed systems (storm sewers). The project study group must have identified a drainage outlet in a Phase I report for closed drainage systems.

4. The designer is required to determine drainage areas, rainfall intensities, and culvert design and must design all closed drainage systems.

5. Drainage areas greater than 625 acres (250 ha) should have been identified by the project study group in the Phase I report. On large projects, a preliminary drainage report is prepared and transferred to the designer.

6. Any drainage structure requiring a waterway opening greater than 7.5 ft^2 (0.7 m^2) should be sized by the district Hydraulics Engineer. The type and design of a pipe or box culvert will be determined by the designer using the *Culvert Manual*. Multiple-box culverts, bridges, and large box culverts (> 12 ft x 12 ft (> 3.5 m x 3.5 m)) will be designed by the Bureau of Bridges and Structures or consultants.

7. Reference the Department's *Culvert Manual* and *Drainage Manual* for more information.

4-2.11 Soils and Geotechnical Investigations

Reference: None

1. The designer requests soil characteristics for pavement designs.

2. A Geotechnical Report should be completed in the planning stage; if not, the designer may need to request one from the district Geotechnical Unit.

3. Borings may be required for new pavements, bridges, box culverts, wingwalls, retaining walls, high-mast lighting, and deep storm sewers. Contact the district Geotechnical Unit to schedule borings.

4. The district Geotechnical Unit performs the following:

   - prepares the Soils Report (e.g., determines maximum fill and cut slopes, provides drainage recommendations for soils, determines the areas for removal of unsuitable materials);
   - performs simple pavement testing;
   - determines special materials to be used and provides assistance for special provisions;
   - determines when the Bureau of Bridges & Structures should be involved in the design of retaining walls and other types of walls; and
   - provides input on project schedules based on the expected availability of materials.

5. The Bureau of Materials and Physical Research:

   - determines layer coefficients for special pavement designs,
   - performs complex pavement and soil tests, and
   - provides special assistance as needed.

6. See *Geotechnical Manual* for more information.

4-2.12 Patching Survey

Reference: Chapter 53

1. The designer will need to conduct a patching survey on pavement rehabilitation projects.

2. The designer should coordinate the survey with maintenance and construction personnel.

3. Usually, two patching surveys are conducted:

   - the first in Phase I to determine the preliminary scope of pavement work; and
   - the second near the end of the design phase to determine contract quantities.

4-2.13 Pavement Rehabilitation

Reference: Chapter 53

1. These are established by IDOT policy.

2. The designer must adhere to policy. However, if the designer determines that policy is not applicable, the designer can request a variance from the Bureau of Design and Environment.

4-2.14 Pavement Design

Reference: Chapter 54

1. The designer submits the required pavement information to the district Pavement Design Engineer.

2. The district Pavement Design Engineer reviews and submits alternative designs to the Bureau of Design and Environment.

3. The designer ensures that the approved pavement design is placed into the construction plans on the typical sections.

4-2.15 Utilities Coordination

Reference: Chapter 6

1. The designer coordinates work with the Project Support Section.

2. The designer contacts the Project Support Section to determine the potential involvement with utility companies.

3. The designer provides preliminary plans to the Project Support Section who then forwards these to the affected utility companies for markup and return to the designer.

4. The designer shows the location of all known utilities existing on the plans.

5. The designer identifies the possible locations of conflicts due to the proposed improvement.

6. The designer works with the Project Support Section to resolve any conflicts.

4-2.16 Railroad Involvement

Reference: Chapter 7

1. Any formal contact with railroad companies is accomplished through the Agreements Unit in the Bureau of Design and Environment. Where a district Railroad Unit exists, informal contact can be made with a railroad to obtain preliminary information.

2. Railroad agreements usually require 18 to 24 months to process. Start this process early.

3. When work is performed by railroad forces, an Agreement is required. Some work included in the highway plans on railroad right-of-way and/or to railroad facilities may also require an agreement.

4. Where a contractor must work on the railroad right-of-way, railroad insurance is required. The designer must include a special provision and pay items with the plans which requires this insurance.

4-2.17 Public Transportation Involvement

Reference: Chapters 55 and 58

1. A construction project may affect the location of bus turnouts or turnarounds or may involve commuter trains.

2. If a conflict appears unavoidable, the designer should coordinate with local public transportation agencies and school districts.

3. The designer must determine how the Traffic Control Plan will affect public transportation (e.g., detours). They need to inform their ridership of revised routes.

4. Bicycle routes to public transportation facilities and bike storage facilities must be considered in project design.

4-2.18 Rest Areas

Reference: Chapter 16

1. Rest areas are usually included only on Interstate routes and other freeways.

2. The preliminary design of a rest area is developed by BDE and then transferred to the district for the preparation of plans on roadways and parking lots.

3. The design of the building, water supply, sanitary needs, and utilities is handled by the Capital Development Board, Bureau of Design and Environment, and district.

4. See Figure 16-1A for details of which office is responsible for the various activities with rest areas.

4-2.19 Experimental Items

Reference: None

1. The designer coordinates their use with the Bureau of Materials and Physical Research.

2. The designer or Bureau of Materials and Physical Research usually develops the specifications for experimental items.

3. Experimental items may also be initiated by BDE, which then prepares the specifications and work plan. The designer incorporates these into the final construction plans.

4. The designer coordinates work plans with the Bureau of Materials & Physical Research.

5. The Bureau of Materials & Physical Research secures FHWA approval, if necessary.

6. The district may be requested to monitor the item in the field.

4-2.20 State and Federal Permits/Approvals

Reference: Chapter 28

1. The designer may need to coordinate with the US Army Corps of Engineers, US EPA, US Coast Guard, Illinois EPA, Illinois Division of Waterways, IDNR, the State Fire Marshall, etc.

2. The district Hydraulics Unit or Environment Unit may become involved in any water-related permits.

3. Other permits or approvals on a project may include utility, driveway, and access permits.

4-2.21 Traffic Engineering

Reference: Chapters 56 and 57

1. The designer determines the placement of pavement markings. The district Bureau of Operations (District 1 Bureau of Traffic) reviews the plans.

2. The designer must consider the placement of signs in the design of a project.

3. Generally, traffic signs are not part of the design plans and are usually prepared as a separate set of plans by the district Bureau of Operations (District 1 Bureau of Traffic). On Interstate or other freeway projects, signs are included in the roadway contract. Also, mast-arm mounted traffic signs are always included in the roadway contract.

4. For signal plans, the following applies:

   - Warrants for signals are usually requested by the project study group when an Intersection Design Study (IDS) is submitted.

   - Signals could also be added to a project at the request of the district Bureau of Operations (District 1 Bureau of Traffic). All locations require an IDS submittal, except standard designs for temporary traffic signals according to the *Highway Standards*.

   - Traffic signal plans are usually prepared by the district Bureau of Operations (District 1 Bureau of Traffic) and added to the plans by the designer.

5. For highway lighting, the following applies:

   - See Chapter 56 for warrants on highway lighting.
   - In all districts, except District 1, the Bureau of Design and Environment prepares the plans and specifications for lighting.
   - In District 1, the lighting plans are prepared by the district Bureau of Electrical Operations.
   - When high-mast lighting is used, the designer must request soil borings.

6. For overhead signs, the following applies:

   - When standard designs do not apply, the Bureau of Bridges and Structures is involved in the structural design.
   - The district Bureau of Operations (District 1 Bureau of Traffic) usually prepares the message for each sign and selects its location.
   - Cantilever and truss-mounted signs require soil borings.

7. The designer must incorporate the proper highway standards for signing, signals, and lighting into the final construction plans.

4-2.22 Traffic Control Plans (TCP)

Reference: Chapters 13 and 55

1. A work zone traffic management plan should be prepared and included as a part of an approved Phase I report, designated as a Traffic Management Analysis (TMA) plan.

2. The designer prepares the TCP from the approved TMA.

3. The designer coordinates the TCP with the district Bureau of Operations.

4. The TCP should be on separate plan sheets.

5. The designer must also include the appropriate traffic control standards in the final construction plans.

4-2.23 Plan-in-Hand Field Inspection

Reference: Chapters 2, 3, and 66

1. The PIH is usually scheduled for all projects.

2. Appropriate individuals should be invited (e.g., FHWA, BDE, district Project Implementation, district Operations, district Land Acquisition Section).

3. Interstate projects require coordination between BDE and FHWA.

4-2.24 Special Waste

Reference: Chapters 26 and 27

1. Initial investigations are accomplished by the district Environment Unit during the development of a Phase I study.

2. The designer incorporates any mitigation plans from the Phase I report, Environmental Assessment, or FEIS into the final construction plans.

3. The designer includes any necessary special provisions in the plans.

4. Specialized consultants are used to do sampling and testing and to develop specifications for disposal.

5. The designer should inform the project study group of any changes in the scope of work concerning special waste.

4-2.25 Coordination with Local Officials

Reference: Chapter 5

1. The designer coordinates agreements, letters of understanding, letters of intent, and plan reviews with the Project Support Section.

2. Early coordination is accomplished during Phase I by the project study group.

3. The designer must ensure that commitments are incorporated into the final construction plans from the Phase I report, Environmental Assessment, or FEIS.

4. The designer may be requested to incorporate items of local interest into the plans.

5. The designer ensures that details for the installation and/or improvement of city-owned utilities or traffic signals are coordinated as early as possible in the design process.

6. In urban areas, the designer should coordinate the traffic control plans with local officials.

7. The designer will need to obtain final plan review from local officials (for traffic signals, drainage, landscaping, etc.), working through the Project Support Section.

8. The designer will need to identify and coordinate, with a city or town, encroachments from sign overhangs onto State right-of-way.

9. The designer may need to attend local meetings with city councils, school boards, drainage districts, or neighborhood groups.

10. The designer will address how emergency services will be accommodated during construction.

11. The designer will coordinate the pavement type selection and pavement design on non-State highways with the local government.

12. The designer will coordinate the type and selection of noise abatement with adjacent residents and the local government.

4-2.26 Right-of-Way

Reference: None

1. The project study group determines preliminary R/W needs and limits during Phase I.

2. Once final construction limits are decided, the designer develops R/W limits and forwards the limits to the district Land Acquisition Section.

3. The district Land Acquisition Section or a consultant prepares final R/W plats.

4. The district Land Acquisition Section informs the designer when all R/W is cleared.

4-2.27 Landscaping

Reference: Chapter 59

1. The district Bureau of Operations (District 1 Bureau of Maintenance) is responsible for landscaping on all projects.

2. The designer provides a set of preliminary plans to the Bureau of Operations for recommendations.

3. The Bureau of Operations marks up the set of plans, indicates the types of plants required, and notes which specifications or special provisions will be used.

4. The designer is responsible for including the information on the plan sheets and incorporating the remainder of the information into the project documents.

4-2.28 Coordination with FHWA

Reference: Chapter 31

1. Because IDOT is operating under a Project Oversight Agreement in accordance with Section 106 of Title 23 *USC*, FHWA is not involved in the design of most Federal-aid projects; FHWA is involved with most projects on the National Highway System. However, the design of Federal-aid projects is always discussed at district Coordination Meetings.

2. When major changes are proposed to an approved Phase I report, the designer must coordinate these changes with the project study group. If a proposed change affects an approved FONSI or FEIS, FHWA should be briefed at a monthly Coordination Meeting on the extent of the change.

3. FHWA periodically checks the Department's compliance with approved Reports through annual process reviews of completed construction projects. Therefore, the designer should not make any major changes to the final construction plans without discussing the proposals with the project study group.

4. The designer should invite FHWA to Plan-In-Hand Field Inspections on Interstate projects.

4-2.29 Project Cost Estimate

Reference: Chapter 65

1. The designer calculates quantities and prepares the summary of quantity sheets.

2. The District Estimator will input these quantities into the BDE Contract Management System (ECM).

3. The District Estimator estimates unit prices, prepares all forms, and submits these to the Estimating Unit in BDE.

4. Usually, the designer is not involved with determining unit prices.

4-2.30 Comparison to Estimated Program Costs

Reference: Chapter 65

1. Estimated program costs are initially prepared by the district Bureau of Programming for the annual program.

2. A revised program cost is tabulated in the Phase I report.

3. The designer must be aware of how changes and additions can affect the cost of a project.

4. The project study group must be notified when there are major changes in the scope of approved work in the Phase I report. The designer must request additional funds for a project through a programming change order.

5. The BDE Project Development Unit and the Office of Planning and Programming must concur in and approve all major cost changes to a project.

4-2.31 Specifications and Special Provisions

Reference: Chapter 66

1. The designer develops special provisions for the roadway items not covered by the *Standard Specifications*.

2. The designer assembles all district recurring Special Provisions.

3. The designer reviews the Statewide recurring Special Provisions and indicates the applicable ones on the Checklist.

4. This portion of the PS&E package is now ready to send to the BDE Project Implementation Section.

4-2.32 R/W Purchased and All Permits Obtained

Reference: Chapters 2 and 3

1. The designer must check that all R/W has been purchased or is in quick-take proceedings.

2. All permits must be approved before a project can be placed on a bid letting.

4-2.33 Construction Contract Items and Bid Letting

Reference: Chapter 66

1. The designer uses a Checklist to ensure that all project items have been cleared.

2. The PS&E is submitted to BDE for final checking and processing of documents.

3. The Project Implementation Section authorizes the project to be placed in a bid letting.

4. The bid letting is held and the bids are tabulated. The district and low bidder are notified.

4-2.34 Pre-Construction Meeting

Reference: None

1. The designer typically attends the Pre-Construction Meeting.

2. The designer discusses commitments made and any unusual aspects of the project with the district Bureau of Project Implementation and the Contractor.

Chapter Five

LOCAL AGENCY AGREEMENTS

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

Chapter Five
LOCAL AGENCY AGREEMENTS

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CHAPTER FIVE
LOCAL AGENCY AGREEMENTS

Chapter 5 documents the Department's policies and procedures to use when processing Local Agency Agreements. The term "Local Agency," as used in this chapter, refers to Municipalities, Counties, Townships, fire districts, and other public entities. The procedures in this chapter also apply to non-public entities.

5-1 GENERAL

5-1.01 Need For Agreements

The Department requires an Agreement with a Local Agency when the Local Agency participates in the improvement of a State route and/or when a transfer of jurisdictional responsibility is made. Participation may be a contribution of goods, services, or money (e.g., right-of-way, preliminary engineering, Municipal funds). The Agreement also should resolve questions of maintenance, parking, storm sewer pollution, encroachments, approval of plans, and other similar items.

5-1.02 Signature Authority

If Local Agency participation is less than $250,000, the district engineer, or assignee, may execute an Agreement with the Local Agency except under the following conditions:

- a Jurisdictional Transfer is involved;
- the Department is reimbursing or crediting the Local Agency;
- an Agreement with another State is involved; or
- a Supplemental Agreement causes the Local Agency's share to exceed $250,000.

The Director of Highways will execute Agreements that cannot be executed by the district engineer.

5-1.03 Processing Guidelines and Procedures

The district will prepare Local Agency Agreements in accordance with the applicable State laws and the Department's rules, regulations and policies using the format discussed in Section 5-2. The following sections present the procedures and guidelines for processing Local Agency Agreements.

5-1.03(a) Executed by the District Engineer

The district is responsible for the Agreement from inception to execution. The Project Support Engineer must submit a memorandum describing any element of an Agreement that deviates from IDOT policy to BDE for approval before the Local Agency consummates the Agreement. The district will send one original fully executed Agreement counterpart, together with a copy of all waiver approvals, to BDE where the Agreement will be distributed to the affected Central Office bureaus and retained, in perpetuity, as an official Department document. The district shall also send one copy of the Agreement with the PS&E submittal and a second copy to the Bureau of Statewide Program Planning.

5-1.03(b) Executed by the Director of Highways

The Project Support Engineer will prepare the preliminary draft of the Agreement and send the preliminary draft to the appropriate district bureaus for review and approval of the Agreement prior to submitting one copy to BDE for draft review. To expedite the draft review process, note and explain in the transmittal memo to BDE any deviations from policy contained in the Agreement. If projects involve improvements to an unmarked State route and the Agreement does not provide for a transfer of jurisdictional responsibility, also note the following in the transmittal memorandum:

- whether the appropriate Local Agencies were contacted and their reasons for not accepting jurisdiction,
- whether the project could be deferred, or
- whether the project is the minimum required to prevent further deterioration of the existing pavement.

This information is necessary to obtain Executive Office approval to proceed with the project.

BDE will distribute copies of the preliminary draft to the affected central office bureaus for suggestions and comments. BDE will return to the district the collective comments of the Central Office for incorporation into the Agreement. The district will notify BDE in writing of any disagreements or objections and resolve all serious issues before proceeding. Following preliminary draft approval, the district will prepare the final draft in triplicate (i.e., presupposing a

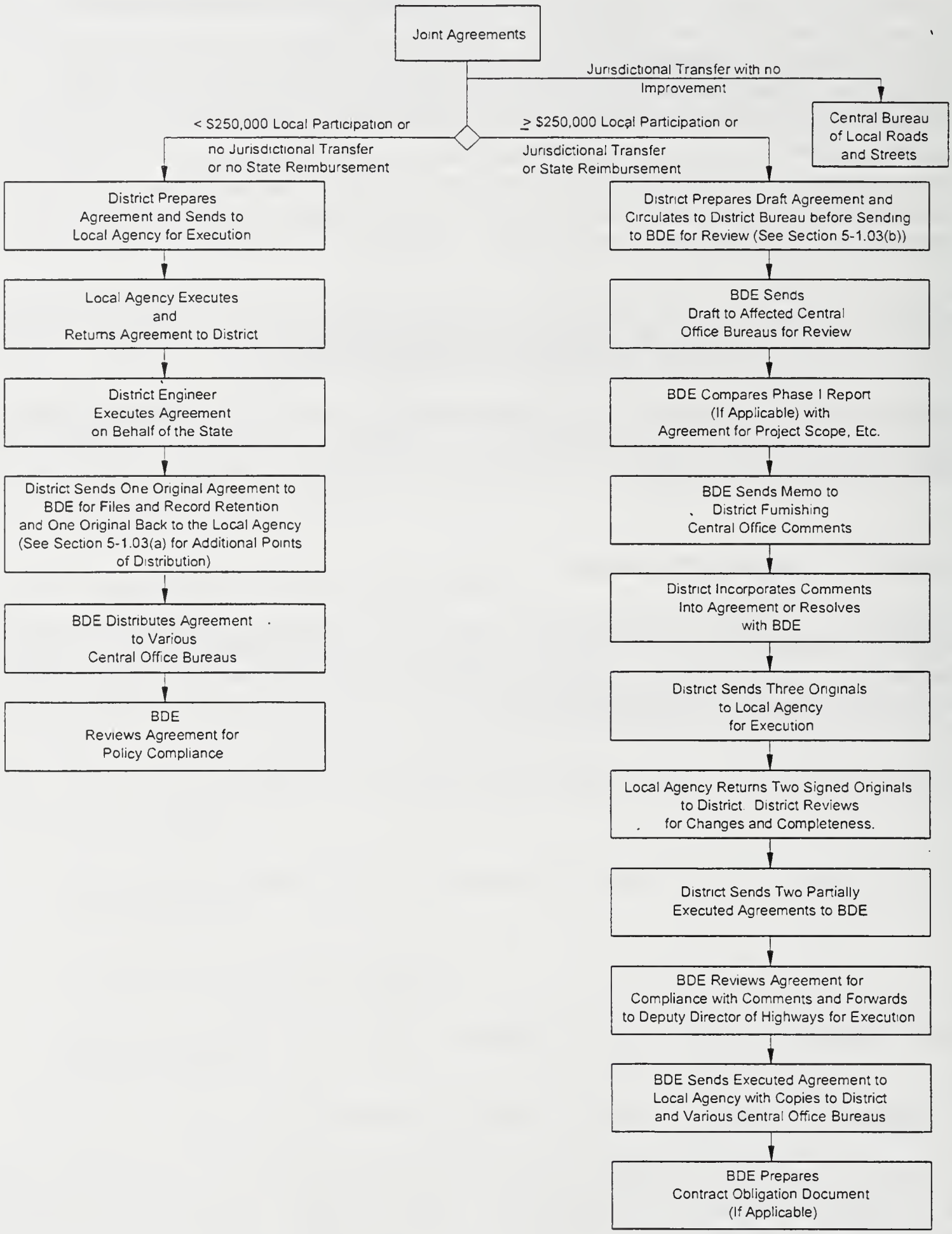
two-party Agreement) on letter-size paper and submit the three counterparts to the Local Agency for execution. The Project Support Engineer will instruct the Local Agency to return two signed counterparts and retain one for a file copy. The Project Support Engineer will then forward the signed counterparts to BDE for execution by the Director of the Division of Highways. BDE will file one counterpart, send the remaining counterpart directly to the Local Agency, and forward copies to the district and other central office bureaus. For an improvement to be eligible for any particular letting, the Agreement, with attached ordinances, shall be fully executed and plan approval received prior to the PS&E dates indicated in the schedule for lettings that are published each year by BDE.

5-1.03(c) Executed by the Secretary of Transportation, Chief Counsel, Director of Finance and Administration and Director of Highways

If the Agreement obligates an expenditure of over $250,000 payable to the Local Agency, the above signatures are required. The review process and all other aspects are the same as Director executed Agreements.

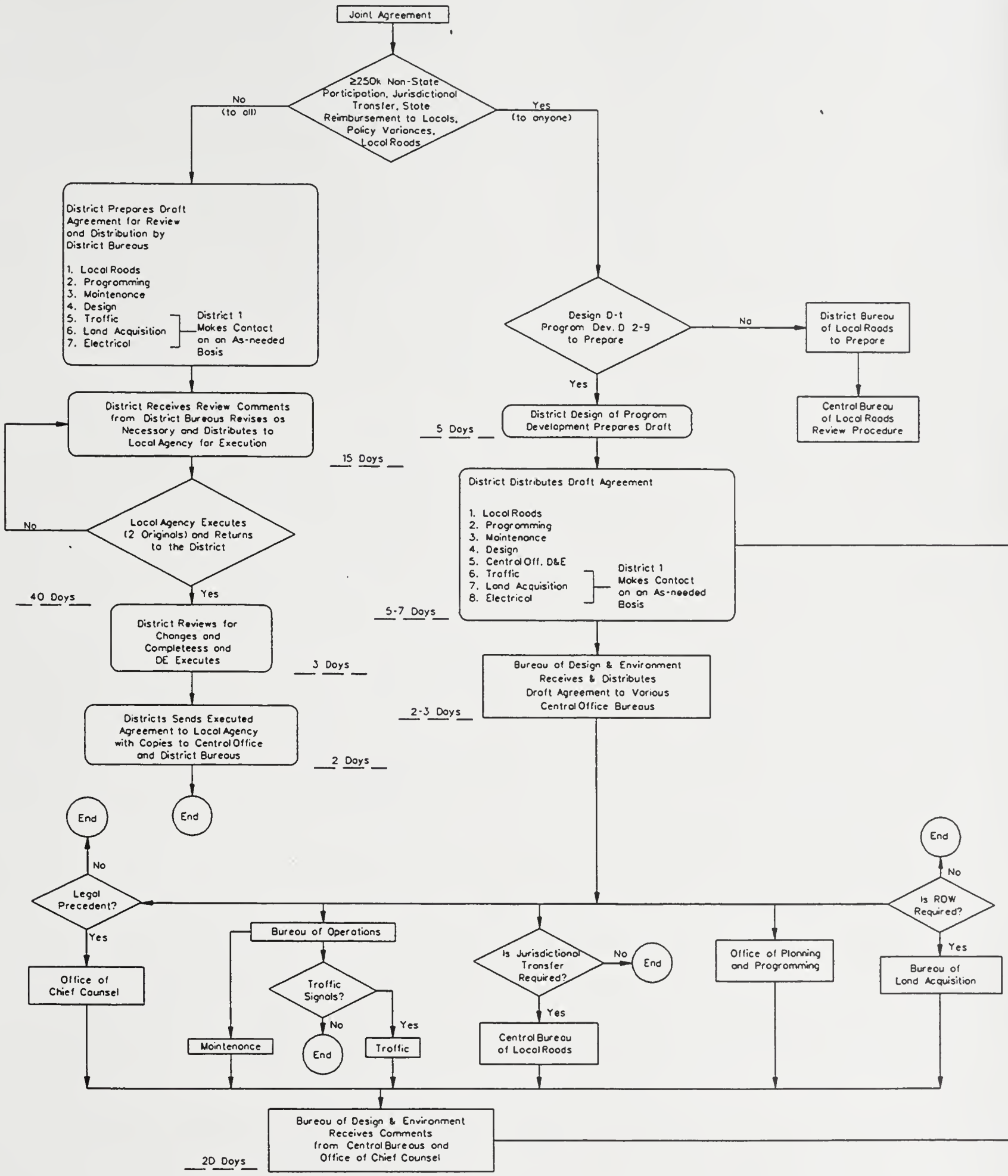
5-1.03(d) Processing Procedures

Figure 5-1A illustrates the procedures to use when processing Local Agency Agreements. Adhering to these procedures will reduce confusion and provide consistency in implementing the process. For additional guidelines, contact BDE. Figure 5-1B illustrates the time line for processing typical local agency agreements.



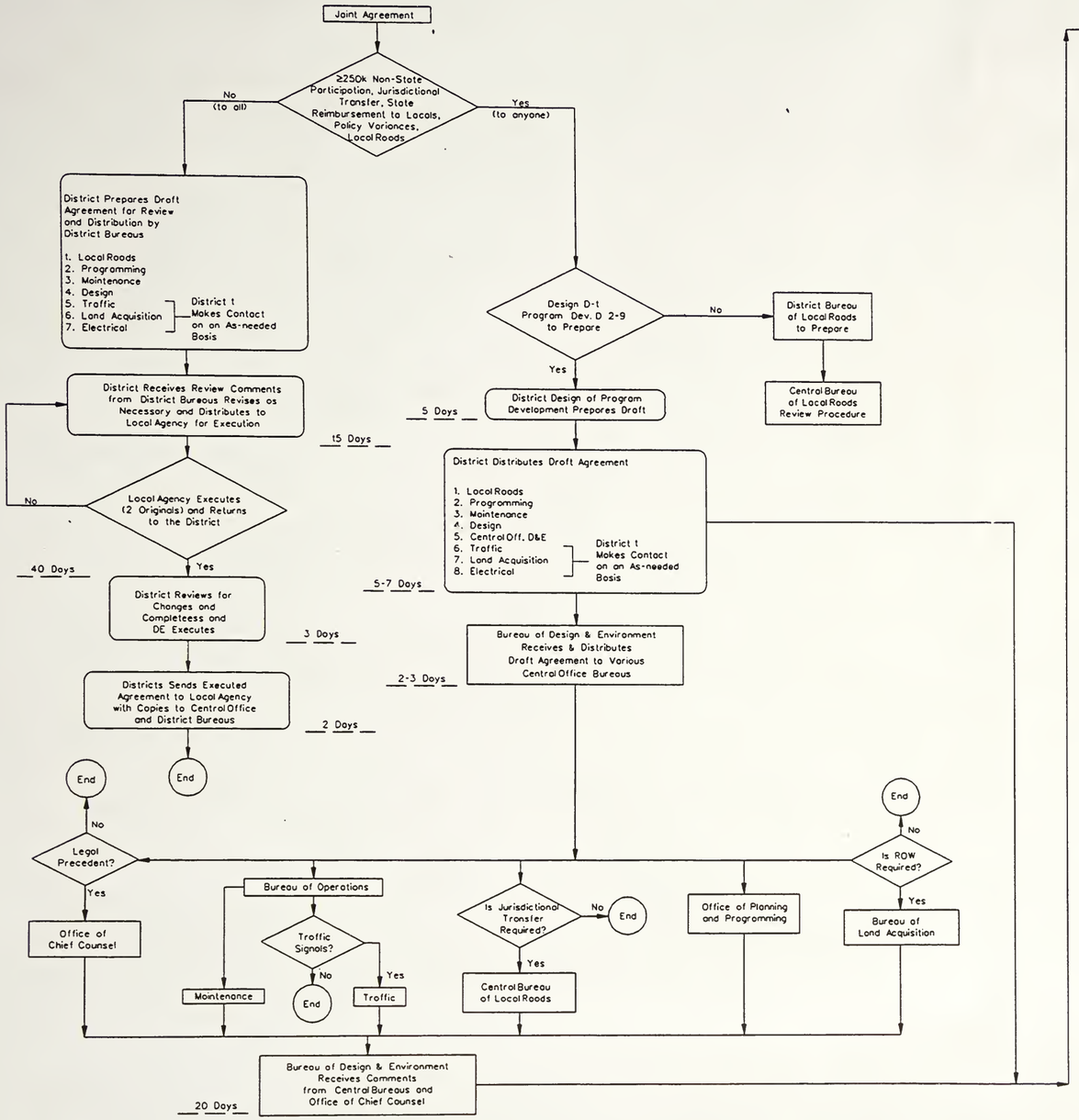
FLOW CHART FOR PROCESSING TYPICAL LOCAL AGENCY AGREEMENTS
(Bureau of Design & Environment)

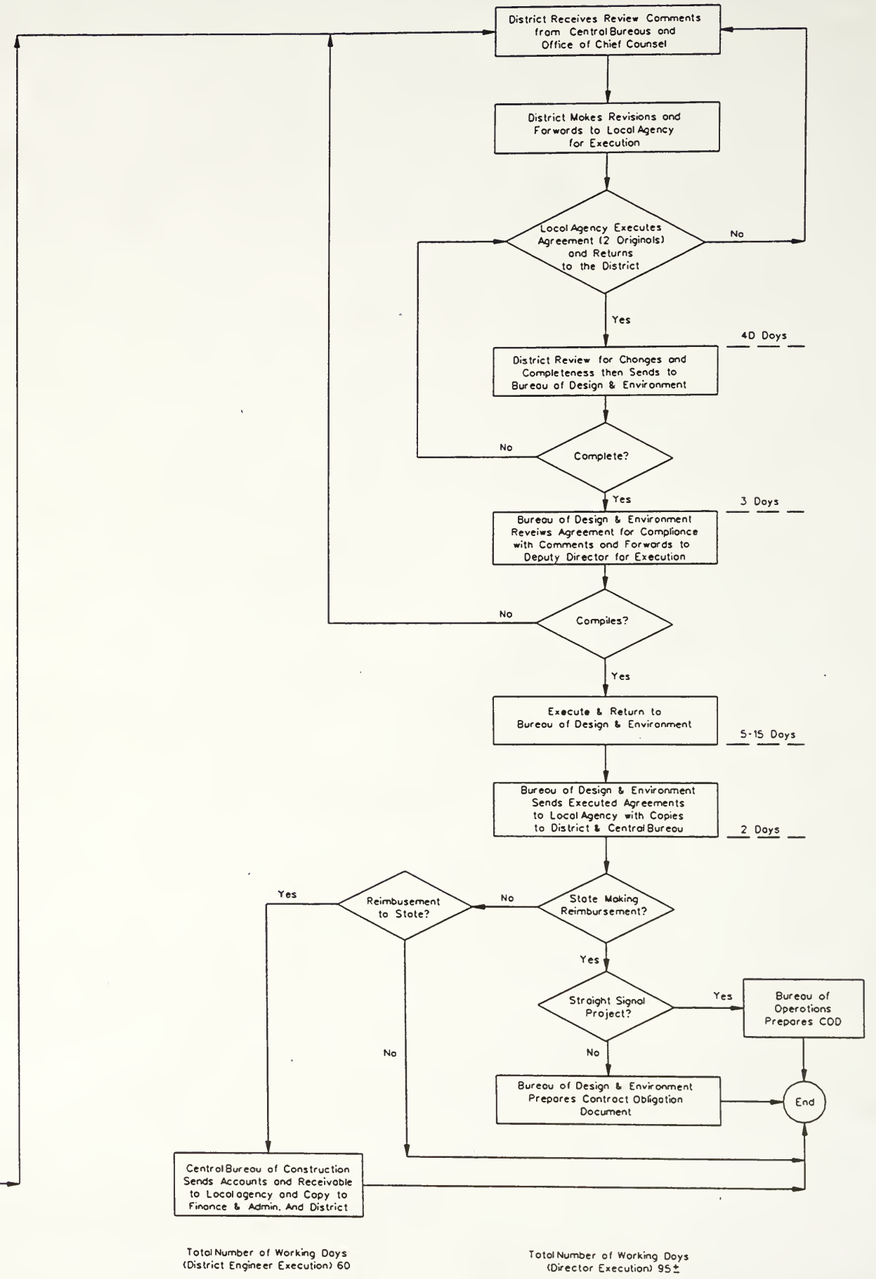
Figure 5-1A



TIME LINE FOR PROCESSING TYP
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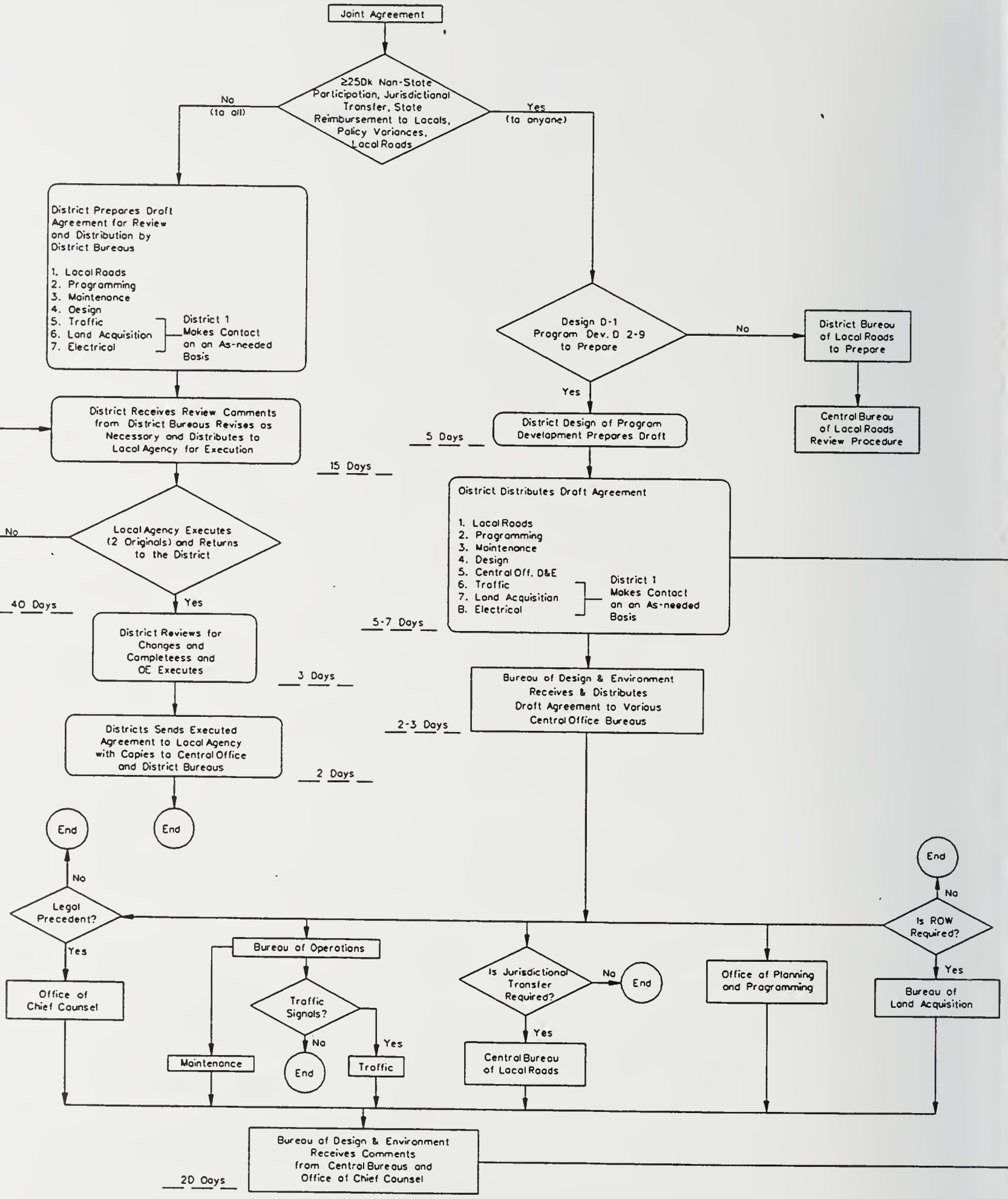


Total Number of Working Days (District Engineer Execution) 60

Total Number of Working Days (Director Execution) 95±

TIME LINE FOR PROCESSING TYPICAL LOCAL AGENCY AGREEMENTS
(Bureau of Design & Environment)

Figure 5-1B



TIME LINE FOR PROCESSING TYP
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5-2 AGREEMENT FORMAT

There is one format that is typically used for Agreements between the Department and a Local Agency. The following sections discuss the agreement format.

5-2.01 Developed Format

The district will use the Developed Format on all projects. See Section 5-8 for a sample of the Developed Format.

5-2.02 Description of Improvement

In the Agreement, include a brief description of the improvement to completely inform the Local Agency of the extent of the improvement. If the improvement extends beyond the limits of the Local Agency, also define the limits of Local Agency involvement. Provide the following in the description:

- the route designation and improvement limits, identified by official street names, as practical;
- the proposed number and width of traffic lanes;
- the width of any parking lanes;
- the width and type of median, if any;
- the type of curb and gutter construction;
- a description of the sidewalk and/or other work requested by the Local Agency; and
- any storm sewer or incidental construction required.

5-2.03 Termination

Include in the Agreement a mutually acceptable time of termination not to exceed three years if the contract is not awarded.

5-3 MAINTENANCE OBLIGATIONS

The Agreement should describe in detail the maintenance obligations of all parties to avoid potential misunderstandings upon completion of construction. Normally, on streets that are a part of the State highway system, the Department will maintain the following:

- the traffic lanes, including left- and right-turn lanes or bi-directional lanes, and the adjacent curb and gutter or ditch; and

- the median area, if provided.

The following sections provide additional information on maintenance obligations.

5-3.01 Traffic Lanes Under Municipal Jurisdiction

The Municipality will maintain the traffic lanes and any adjacent curb and gutter under Municipal jurisdiction.

5-3.02 Parking Under Municipal Jurisdiction

The Agreement should assign responsibility for parking maintenance according to the following criteria:

1. On-System Parking. If parking, including restricted parking, is included in the improvement, the Municipality will maintain the parking lanes and the adjacent curb and gutter.

2. Off-System Parking Lanes. The Municipality will accept complete jurisdiction of off-system parking facilities including, but not limited to, the following:

   - maintenance,
   - operation,
   - repair,
   - reconstruction,
   - striping, and
   - provision of electrical energy for lighting systems.

   The Municipality will hold the State harmless from any legal suits arising from the construction, operation, and maintenance of off-system parking facilities.

5-3.03 Parking or Municipal Traffic Lanes Assumed by State

If an IDOT traffic capacity analysis demonstrates a justification for additional traffic lanes, the Department may assume the additional full-time traffic and/or parking lanes under Municipal jurisdiction. Once assumed, the Department will maintain these facilities including any adjacent curb and gutter.

5-3.04 Storm Sewers and Appurtenances

The Municipality normally will perform the routine maintenance of storm sewers and appurtenances constructed as part of the improvement, provided the storm sewer was designed to accommodate State highway drainage only. Routine maintenance is defined as those functions necessary to maintain the sewer in a serviceable condition including:

- cleaning sewer lines, inlets, manholes, and catch basins; and
- repairing and replacing inlet, manhole, and catch basin frames, grates, and lids.

The following provides additional guidance on the maintenance responsibilities of storm sewers and appurtenances:

1. Storm Sewers Constructed for State Highway Drainage Only. Beyond the level of routine maintenance, the Department will maintain, repair, and/or reconstruct storm sewers constructed for State highway drainage only.

2. Storm Sewers Constructed for Joint Municipal/State Use. If the storm sewer is oversized to accommodate a joint Municipal/State use, the Agreement shall proportion the cost for maintenance, repair, and/or reconstruction beyond the level of routine maintenance in the same manner as the initial construction cost was proportioned.

5-3.05 Traffic Signals

If traffic signals are included in the improvement and are within the Municipality's corporate limits, the Municipality and the Department normally will share maintenance responsibilities. The Municipality is responsible for maintenance and energy costs as provided in Part 544 of the *Illinois Administrative Code* (contact the Bureau of Operations for additional guidance).

5-3.06 Lighting

The following presents the maintenance obligations for lighting:

1. Separate Systems. The Municipality is financially responsible for maintaining any separate lighting system installed by the Department at the request of the Municipality. The Municipality also will furnish and pay for the system's electrical energy.

2. Combined Systems. In addition to any obligations in Part 544 of the *Illinois Administrative Code* (contact the Bureau of Operations), the Municipality is financially responsible for maintaining the luminaires, luminaire wiring, conduit, and control devices and for providing the electrical energy for the combined systems the Department installs at the request of the Municipality.

5-3.07 Sidewalks

The Municipality will maintain any new or replacement sidewalks the Department provides in the improvement, including those constructed on structures.

5-3.08 Right-of-Way Under Municipal Jurisdiction

Use the following guidelines to determine maintenance responsibility for right-of-way under Municipal jurisdiction:

1. Urban Cross Section. The Municipality will maintain the entire right-of-way outside of that maintained by the Department. This includes, but is not limited to, Municipal utilities, landscape plantings, parkways; guardrails, crosswalks, and stop line markings.

2. Rural Cross Section. The Department will maintain the entire right-of-way excluding the landscaping and utilities installed by others and the right-of-way under Municipal responsibility as discussed in Sections 5-3.01 through 5-3.07.

5-3.09 Municipal Streets

If Municipal streets are improved as part of the State highway project, the Municipality is responsible for maintaining the Municipal streets, except as provided in Maintenance Policy 11-5.

5-3.10 Bicycle Paths

The Municipality will maintain any bicycle paths associated with the State highway project. Incorporate the following paragraph in the Agreement:

> *The _____ agrees to assume responsibility for the administration, control, reconstruction, and maintenance of the bicycle path in its entirety. The _____ further agrees to indemnify and hold harmless the State, its officers, employees, and agents from any and all claims, lawsuits, actions, costs, and fees (including reasonable attorney fees and expenses) of every nature and description arising from, growing out of, or connected with the construction and/or operation of the bicycle path.*

5-4 AGREEMENT ATTACHMENTS

5-4.01 Parking Restrictions

The district should ensure that any on-street parking included in the improvement is parallel and adjacent to the curb and, as practical, should eliminate any diagonal on-street parking from the project. Diagonal on-street parking shall be analyzed and approved by BDE before the Department will execute an Agreement for a joint Municipal/State improvement (see Chapter 48). The Municipality shall adopt and enforce an appropriate parking ordinance as part of the Agreement. If an appropriate parking ordinance is already in effect, obtain copies from the Municipality. Attach the parking ordinance as an Exhibit to the Agreement prior to execution. Enforcement of the parking ordinance by the Municipality is understood to include erection and maintenance of any necessary "NO PARKING" or "PARALLEL PARKING ONLY" signs. See Example 2 in Section 5-8 for a sample parking ordinance.

5-4.02 Sewer Restrictions

The Municipality shall adopt and enforce an ordinance prohibiting the discharge of sanitary sewage or industrial waste into any storm sewer or drainage facility constructed by the Department as a part of the project. The district will attach the ordinance as an Exhibit to the Agreement prior to execution. See Example 3 in Section 5-8 for a sample storm sewer ordinance.

5-4.03 Encroachments

If a State highway improvement is within a Municipality, the work generally is performed on right-of-way that is either acquired by or dedicated to the Municipality. Occasionally, the Department performs work on new right-of-way, purchased either by the State or jointly with the Municipality, under an Agreement with the Municipality. As part of the Agreement, the Municipality will provide for the disposition of any existing encroachments and adopt and enforce an ordinance prohibiting future encroachments on State highway right-of-way.

Encroachments on State highway right-of-way will not be permitted and shall be removed. Unless the encroachment is an existing violation, the State may compensate the owner during right-of-way negotiations. However, if the safe and free flow of vehicular and pedestrian traffic is maintained, the Department may allow the encroachment to remain. In such cases, the Municipality will issue a revocable permit, approved by the Department, that provides for the future removal of the encroachment if necessary.

The Department defines an encroachment as any building, fence, sign, billboard, or other structure or object (excluding certain items over sidewalks and most public and private utilities) that are placed, located, or maintained in, on, under, or over any portion of State highway right-of-way, except those structures and objects that:

- are informational signs;
- constitute a part of the highway;
- are a part of the highway facility's access control; or
- are in the public interest and do not impair highway operations or interfere with the safe and free flow of vehicular and pedestrian traffic.

Although not applicable to freeways, the last item includes awnings, marquees, signs advertising business activity, and similar building-supported structures that overhang a sidewalk on State highway right-of-way. If a building is set back from adjacent buildings that are flush with a sidewalk on State highway right-of-way, the Department may permit pole-mounted signs advertising the set-back enterprise to overhang the State highway right-of-way as it permits building-supported encroachments. In addition, if a public or private utility located in or near a sidewalk impedes the safe and free flow of pedestrian traffic, the Department considers the utility an encroachment. Such utility encroachments are subject to a revocable permit. The Department should ensure that the placement of above-ground utilities does not restrict the clear width of the sidewalk to less than 3 ft (1 m). Clear width is the distance from the edge of the sidewalk to the near edge of the utility facility.

The Department and Municipality jointly will establish a project right-of-way line within the limits of the platted street that will be encroachment free, except for revocable permits and the exempt structures and objects previously discussed. Representatives from both agencies will attend a field review to accomplish this task. As practical, establish the project right-of-way line to not less than 2 ft (600 mm) behind the face of the curb. After the field review, draw the project right-of-way line on the plans and designate the Municipal right-of-way area outside the project right-of-way line as a construction easement in which the Department will be permitted by Agreement to perform work. After construction, the Municipality will control all areas outside the project right-of-way.

If an existing encroachment must remain on project right-of-way, the Municipality will issue a revocable permit, approved by the Department, that provides for the future removal of the encroachment, if necessary. The district will coordinate a joint field review with the Municipality to ensure that encroachments do not violate *Illinois Highway Code* 605 *ILCS* 5/9-112.4. If during the field review it is determined that an encroachment impairs the safe and free flow of vehicular or pedestrian traffic, the Municipality will revoke the permit. After the field review, the appropriate district personnel will certify that all encroachments have been properly disposed (see Form BD 488, Joint Agreement/Letter of Understanding). Structures and objects over sidewalks on State highway right-of-way within the Municipality that satisfy IDOT criteria may remain in place without a revocable permit. However, if alterations to a structure or object or to the highway itself subsequently cause the encroachment to impede the safe and free flow of traffic, the Department will require adjustment or removal of the encroachment.

In the Agreement, incorporate provisions for the disposition of existing encroachments and for the prohibition of future encroachments. Use the appropriate wording in the samples illustrated in Section 5-8. Regardless of the improvement's Federal-aid funding eligibility, the district will incorporate the encroachment verbiage in the Agreement and obtain the necessary Municipal encroachment ordinance. See Example 4 in Section 5-8 for a sample encroachment ordinance. This will ensure uniform treatment of encroachments for all improvements. As practical, attach and directly reference the encroachment ordinance as an Agreement Exhibit prior to executing the Agreement. However, cases such as Municipal participation in preliminary engineering may preclude this suggested practice. In such cases, the district will arrange to execute the Agreement with the understanding that the Municipality will provide the Department with certified copies of the encroachment ordinance prior to bid advertisement.

5-4.04 Approval of Plans

Regardless of which agency prepares the plans for the improvement, submit prints of the detailed plans to the Municipality and obtain formal approval to ensure that the Municipality is fully aware of the extent of the improvement. During construction, this will better position the Department to refuse unwarranted requests for additional improvements and revisions by abutting property owners. The district will obtain one copy of a Municipal resolution or a formal letter from a Municipal official responsible for approving the plans and forward it to BDE prior to PS&E submittal.

5-4.05 Funding Resolution

If the Local Agency is to reimburse the Department for work described in the Agreement, a funding resolution providing payment for the work must be attached to the Agreement.

5-5 DIVISION OF COST

The extension of a State highway into and through a Municipality provides a multipurpose facility that accommodates vehicular and pedestrian traffic for both the State and Municipality (i.e., the State highway becomes an integral part of the local street system). As such, under an Agreement with the Municipality, the Department performs State-initiated highway improvements within Municipal jurisdictions which proportionately benefit both parties. This section delineates the financial responsibilities of each party.

5-5.01 State Responsibility

The State is financially responsible for preliminary engineering, right-of-way, construction, and construction engineering for the traffic lanes on the State highway and the appurtenances related to the traffic lanes for which the State has jurisdiction.

5-5.02 Municipality Responsibility

The Municipality is financially responsible for preliminary engineering, right-of-way, construction, and construction engineering for the items specified in the following sections.

5-5.02(a) Parking

The Agreement will base the division of cost between the State and the Municipality on the following criteria:

1. New On-System Parking. New on-system parking is defined as the construction of parallel parking either to replace existing parking assumed by the State for additional traffic lanes or to provide parking where legal parking did not previously exist. If the Municipality includes new on-system parking in the improvement, proportion the cost as follows:

    a. ADT > 5000. If the highway facility has an average daily traffic (ADT) greater than 5000, use the following criteria to proportion the cost:

    - If base and surface construction of new on-system parking is equivalent to the adjacent State-maintained traffic lane and the lane width for parking meets Department criteria, proportion the cost equally (i.e., 50%/50%) between the State and Municipality.

    - The State is financially responsible for 100% of curb and gutter construction.

- If the pavement composition of new on-system parking is less than the adjacent traffic lane's or if the lane width for parking does not meet Department criteria, the Municipality is financially responsible for 100% of the cost.

b. ADT < 5000. Construct the new on-system parking with a base and surface composition that is compatible with its anticipated usage to a width acceptable to the Department at 100% Municipal expense.

2. Existing On-System Parking (Resurfacing, Repair & Reconstruction). If existing on-system parking is retained in an urban street resurfacing project, the State is financially responsible for resurfacing only the pavement area maintained by the Department including a full-width taper on the parking lane from the edge of the travel lane to gutter flag or face of curb where no gutter flag exists. Limit the maximum width of taper to that of the adjacent travel lane. If the Municipality elects to have existing on-system parking resurfaced to a full thickness, the Municipality is financially responsible as follows:

- 50% of milling and resurfacing costs for existing on-system parking having a width less than or equal to that of the adjacent travel lane;

- 100% of milling and resurfacing costs for that portion of existing on-system parking greater than the width of the adjacent travel lane;

- 100% of base repair costs for the entire width of existing on-system parking;

- in Municipalities with less than 3000 population, the maximum Municipal participation toward milling and resurfacing costs for existing on-system parking is a cost equivalent to three years' Motor Fuel Tax allotment. The District shall verify locations of existing on-system parking for all joint State/Municipal improvements; and

- 100% of reconstruction costs for existing on-system parking and any adjacent curb and gutter.

3. Restricted On-System Parking. If an IDOT traffic capacity study establishes the need to restrict parking during peak hours to ensure the safe and free flow of traffic and the Municipality enacts an ordinance implementing such parking restrictions, the State will pay 100% of full-thickness resurfacing costs, up to a maximum 12 ft (3.6 m) width including any needed base and curb repairs, for the restricted on-system parking.

4. Off-System Replacement Parking. If, for the benefit of State highway safety and capacity the Department and Municipality jointly determine it necessary to replace existing and legal on-system parking (not accommodated under Item 1) with off-system parking, the State may financially participate as follows:

a. Alternative Off-System Replacement Facilities. The State will pay 100% of all engineering, right-of-way (except Municipal property), and construction costs to replace existing on-system parking with alternative off-system parking. The maximum ratio for replacing parking spaces is one to one. Alternative off-system replacement parking may include improving adjacent local streets to accommodate new parallel parking, constructing new off-street parking facilities, or a combination of the two. Construction costs will include those items IDOT deems reasonable and practical for a safe and convenient parking environment (e.g., paved surface, drainage, lighting, pedestrian walkways, fencing). The Municipality will pay 100% of the construction costs associated with installing guard and toll collection facilities, metering devices, and parking spaces beyond the maximum one-to-one replacement ratio.

b. Municipal Property. If the Municipality owns the site selected for off-system replacement parking, the Municipality will provide the property at no expense to the State.

c. Clearing Municipal Property. As part of the State's financial responsibilities to construct replacement parking, the State will pay 100% of the cost to clear Municipal property if included in the IDOT construction contract for the improvement. See Example 5 in Section 5-8.

5. Right-of-Way. See Item 1(d) in Section 5-5.02(b) for information on right-of-way associated with parking.

5-5.02(b) Sidewalks

For sidewalks, the Agreement will be based on the following to determine the division of cost between State and Municipality:

1. New and Deteriorated Sidewalks. Use the criteria in Chapters 17 and 48 to determine the warrants for sidewalks. If these criteria are met and the Municipality agrees to maintain the sidewalks, proportion the improvement costs associated with new or deteriorated sidewalks as follows:

   a. New Sidewalks. Proportion the cost equally (i.e., 50%/50%) between the State and Municipality for new sidewalks within the project termini or for short distances outside the project termini as may be required to connect sidewalks to significant pedestrian generators (e.g., schools, transit facilities). The Phase I Study Report will document the need for sidewalk construction.

   b. Deteriorated Sidewalks. The Municipality will pay 100% of the cost to remove existing deteriorated sidewalks. Proportion the cost 50%/50% between the State and Municipality for deteriorated sidewalk replacement.

c. Utility Adjustments and Other Items. The Municipality is 100% financially responsible for utility adjustments, pedestrian barriers, retaining walls, and other similar items that are required solely for sidewalk construction not necessitated by the IDOT project.

d. Right-of-Way. The Municipality is 100% financially responsible for right-of-way if acquired solely for sidewalk construction. Also, the Municipality will pay 100% of the construction costs for sidewalks associated with the construction of on-system parking not necessitated by the IDOT project. The State will pay 100% for right-of-way if additional right-of-way is required to construct an IDOT-proposed highway cross section.

e. Sidewalk Removal and Replacement. The State is 100% financially responsible for removing and replacing existing sidewalks if such a need is caused by the construction of an IDOT highway improvement.

If sidewalk construction will adversely delay the improvement, consider deleting sidewalk construction from the contract. All sidewalk construction will be considered straight State funded.

2. Adjustment of Existing Sidewalks. If an existing sidewalk requires adjustment due to an IDOT improvement, the State will pay 100% of the adjustment cost. The Department will construct the replacement either in kind or in accordance with IDOT sidewalk criteria, whichever is more economical. The Municipality is 100% financially responsible for sidewalk adjustments that are caused or initiated by a work request from the Municipality.

3. Curb Ramps. See Chapter 58 for criteria related to curb ramps.

5-5.02(c) Highway Lighting Within a Municipality

The Agreement will proportion the costs for highway lighting within a Municipality according to the following:

1. New Lighting. If the Municipality requests or includes street lighting in the improvement, the Municipality is 100% financially responsible for lighting installation and energy costs.

2. Modernization of Existing Lighting. The Municipality is 100% financially responsible for the modernization and betterment of any street lighting system the Municipality installed or caused to be installed in the improvement.

3. Relocation of Existing Lighting. The Department considers the relocation of existing lighting as a utility adjustment which is subject to the cost proportioning discussed in Section 5-5.02(f).

4. Combination Traffic Signal and Lighting. If the poles will be replaced in new traffic signal installations or modernization projects, proportion the cost for combination lighting as follows:

   - Proportion the cost for poles and foundations (i.e., traffic signal appurtenances) in accordance with Section 5-5.02(e).

   - The Municipality is 100% financially responsible for luminaires, luminaire wiring, conduit, and control devices.

5. Warrants for Highway Lighting. See Chapter 56 for criteria related to highway lighting.

5-5.02(d) Storm Sewers

For storm sewers, the division of cost between the State and Municipality will be as follows:

1. Municipality Requests Extension or Use of IDOT Storm Sewer. If the Municipality desires to extend or use the improvement's storm sewer facilities, the Municipality is 100% financially responsible for any increase in system capacity over that required to drain the State highway improvement. An itemized division of cost between the State and Municipality should be included in the preliminary draft Agreement.

   If the Municipality's cost share is minor, use Equation 5-5.1 (i.e., percent of actual storm sewer cost) to determine the Municipality's share:

   $$MC = (ASSC)(EF)[(ECC - ESOC) / ECC] \qquad \text{Equation 5-5.1}$$

   where:

   MC = Municipality's Cost
   ECC = Estimated Combined Cost
   ESOC = Estimated State-Only Cost
   ASSC = Actual Storm Sewer Cost
   EF = 1.15 for Engineering

2. Municipal Storm or Combined Sewer System Rehabilitation or Adjustment. If the Department uses an existing Municipal storm or combined sewer system to drain the State highway, use the following guidelines to proportion any needed sewer adjustment or rehabilitation costs between the State and Municipality:

   a. State Participation. If constructed for State highway drainage only, IDOT designs the highway storm sewer system to accommodate both the watershed runoff naturally reaching the highway site and the surface runoff across the highway right-of-way. If an improvement project uses an existing Municipal storm sewer

system for State highway drainage, the State has no more or less financial responsibility for the storm sewer than any other property owner. The State will allocate straight State or Federal-aid funds for only the share of storm sewer costs that benefit the State. Unless a State highway improvement creates a need to increase the existing storm sewer system's capacity or the Department determines a need to improve the drainage of the State highway system, the State's financial participation will be limited to the cost of improving the storm sewer system within the limits of the State highway right-of-way. Use Equation 5-5.2 to determine the State's share of costs for rehabilitating and/or adjusting existing Municipal storm sewers:

$$SSOC = 100[2(HROWA)(C1)] / [(TASBSS)(C2)] \qquad \text{Equation 5-5.2}$$

where:

SSOC	=	State Share of Cost, percent (%)
HROWA	=	Highway Right-of-Way Area, acres (ha)
C1	=	Hydraulic Runoff Factor for HROWA
TASBSS	=	Total Area Served by Storm Sewer, acres (ha)
C2	=	Hydraulic Runoff Factor for TASBSS

Note: The factor 2(HROWA) in Equation 5-5.2 is an administrative determination accounting for the various factors affecting surface drainage in urban areas. The runoff factors (e.g., C1 and C2 in Equation 5-5.2) normally are used in accepted hydraulic practice and reflect factors such as slopes, percent of area with different permeability rates, etc.

b. Municipal Sewer System Adjustment. The State normally is 100% financially responsible for adjustments to Municipal sewer systems caused by State highway improvements unless it was originally installed on State right-of-way or within the limits of a highway under IDOT jurisdiction. However, if the Municipal sewer system will accommodate State highway drainage, the State may share the cost for adjusting the sewer on the basis of Equation 5-5.2. The State will not share in the cost of adjusting Municipal utilities that are not eligible for State participation. See Section 5-5.02(f) for additional information on utility adjustments.

c. Municipal Sewer System Rehabilitation. The Department may participate in the rehabilitation of structurally deficient or functionally inadequate Municipal sewer systems to the extent such action will benefit State highway drainage. Use Equation 5-5.2 to determine the State's share of rehabilitation costs. If the rehabilitation need is due to structural inadequacy, the Municipality will be responsible for performing the structural condition evaluation. The Department will review and approve the Municipality's findings before committing to State

financial participation. The State will share the cost for the structural condition evaluation in the same proportion it does for construction costs. If the project includes Municipal sewer rehabilitation predicated on a need to increase drainage capacity for a State highway facility, use Equation 5-5.2 to determine the State's share of rehabilitation costs. If the need to increase Municipal sewer capacity is necessitated by a combination of State highway and other needs, the State's financial participation will be negotiated on a case-by-case basis and Equation 5-5.2 will not apply.

d. Combined Storm and Sanitary Sewer Systems. If the Municipal sewer carries both storm and sanitary flows, deduct the sanitary portion from the system's capacity before calculating the State's share of costs. In most areas, it is acceptable to assume 10% of system capacity is used for sanitary flow. However, in areas having significant sanitary flow (e.g., industrial parks, commercial business areas), evaluate the acceptability of using 10% and, if determined unacceptable, the Department will obtain mutual agreement with the Municipality on a reasonable percentage to use in calculations.

e. Separation of Combined Sewer Systems. If the improvement involves separating a Municipal sewer into storm and sanitary systems, the State is financially responsible for its share of the storm sewer system only. The Department will review the Municipality's local storm sewer separation plan before the Municipality adopts the plan, which then becomes the basis for determining funding eligibility and the State's share of rehabilitation costs.

f. Participation Outside an Active IDOT Project. If in the State's best interest, the State may financially participate in rehabilitating an existing Municipal sewer system even though no State highway improvement project is underway. In such cases, consider the impact State highway improvements planned for the area will have on the sewer system and use the applicable guidelines in Item 2 to determine the State's financial responsibility. In determining the State's share of costs, do not consider the affects of any planned non-State facilities.

3. Additional Repair or Reconstruction of Joint-Use Storm Sewers. Joint-use storm sewers constructed under the provisions of Item 1 and 2 that require repair or reconstruction beyond that covered in Section 5-3 will be performed at the joint expense of the State and Municipality. Proportion the costs as proportioned in the Agreement for the sewers' initial construction.

4. Shoulder and Open Ditch Construction. If shoulder and open ditch construction is less costly and compatible with existing development, the Department may provide such a facility. If, instead, the Municipality desires curb and gutter and storm sewer drainage, the Department may provide such a facility; however, the State will not pay for the additional cost.

5-5.02(e) Traffic Signals

The installation, modernization, relocation, electrical energy, and maintenance costs for traffic signals differ according to their application. All are governed by Department rules, regulations, or policy as follows:

1. Dedicated Streets. See Part 544 of the *Illinois Administrative Code* (contact the Bureau of Operations) for information on traffic signals and dedicated streets. Eighty percent (90% on Safety Projects) of the signal cost first will be deducted under Section 544.60 of Part 544 of the *Illinois Administrative Code*. The State will pay 80% (90% on Safety Projects) plus its proration as determined from Section 544.60. This applies only to State-initiated projects.

2. School and Commercial/Industrial Areas. See TRA-5 (contact the Bureau of Operations) for guidelines on traffic signals serving school and commercial/industrial areas.

3. Combinations of the Above Applications. Traffic signals serving both a high-volume, dedicated street opposite a high-volume, private benefit facility may require a hybrid proration of costs. Consult BDE for specific guidance.

4. Emergency Vehicle Preemption Equipment Installation, Modernization, and/or Relocation. The Municipality is 100% financially responsible for emergency vehicle preemption equipment installation, modernization, and/or relocation costs. Cost limitations shown in Item 1 or in Section 5-5.02(g) are not applicable.

5-5.02(f) Utility Adjustments

The Agreement will be based on the following to proportion costs for utility adjustments:

1. State-Initiated Municipal Utility Adjustments. If the proposed improvement is a State-initiated project on a State highway within the Municipal street system, the State will assume the total cost of adjusting Municipal lights, signs, utilities, etc., except that the Municipality is financially responsible, other than in certain cases of Interstate or Freeway construction, for adjusting its facilities located within the Municipality if they were installed:

   - on right-of-way acquired by the Department; or
   - within the defined limits of a street, subsequent to the date the Department accepted maintenance responsibility for the street.

   If the utilities existed within the defined limits of the street prior to the Department's acceptance of maintenance responsibility for the street, the State will pay for the needed utility adjustments.

The Municipality is financially responsible for adjusting its utility facilities if previously installed on State highway right-of-way outside the Municipal limits and subsequently incorporated within the Municipality.

The Department will proportion the cost of adjusting any existing Municipal utility facility located outside Municipal limits the same as for any other utility facility (i.e., the State is financially responsible for the adjustment if the utility is located on private right-of-way and the Municipality will pay for the adjustment if the utility is located on State highway right-of-way).

If financially responsible for utility adjustments, the Municipality may elect to have the Department include the adjustments in the highway improvement plans. However, this does not relieve the Municipality of its funding obligation. Include in the Agreement with the Municipality the conditions for reimbursing the Department for utility adjustment costs.

For any improvement plans that include Municipal utility adjustments, the district will include a statement in the transmittal memorandum to the Central Office that describes the financial responsibilities of both the State and the Municipality. If the Municipality is obligated to pay for utility adjustments, also include in the memorandum the terms of reimbursement included in the Agreement.

Any utility adjustment included in the State's contract at State expense, as provided above, will be limited to adjustments in kind as practical. If the Municipality desires a betterment or extension of the utility being adjusted, then the Municipality is financially responsible for any increase in adjustment cost.

2. Municipality-Requested Utility Adjustments. The Municipality is 100% financially responsible for the cost of any utility adjustment it requests.

3. Other Utilities. The Municipality will exercise its franchise rights to cause private utilities to be adjusted at no expense to the State. The principles set forth in Section 5-5.02(f) regarding utility adjustments for Municipalities will also apply to other legally constructed governmental facilities encountered along the improvement.

4. Permits and Assessment Fees. See Part 530 of the *Illinois Administrative Code* (contact the Bureau of Operations) for information on permits and assessment fees.

5-5.02(g) Participation Cap

For non-private benefit traffic signal installations and/or modernization (see Section 5-5.02(e), Item 1) and mandated utility adjustments (see Section 5-5.02(f), Item 1, adjustments in-kind not betterments) caused by a State-initiated improvement, include in the Agreement a cap or ceiling equal to 125% of the estimated cost to the Municipality for these two items. The estimator will

exercise judgment to ensure that the estimate is properly adjusted to reflect expected inflation between the time the estimate is prepared and the anticipated contract award date.

5-5.02(h) Traffic Lanes Under Municipal Jurisdiction

The State is not necessarily responsible for the maintenance, repair, or reconstruction of all traffic lanes along a State highway. Before preparing an Agreement with a Municipality for a State highway improvement, the district will check IDOT records to determine the width of pavement over which the Department has jurisdiction. The Department is responsible for the jurisdiction of only those portions of streets that it constructed or those portions of local streets which it has subsequently assumed. For through traffic lanes under Municipal jurisdiction, the cost proration is as follows:

- The State will assume the financial responsibility for patching, milling, and resurfacing all traffic lanes along State highways constructed in conjunction with a State-initiated project.

- Repair and/or replacement of curb and gutter or reconstruction of local traffic lanes will continue to be the Municipality's financial responsibility in accordance with existing maintenance agreements.

5-5.02(i) Pedestrian Overpass Structures

The following presents the proration of construction costs and the warrants, liabilities, and maintenance responsibilities for pedestrian facilities:

1. State Highways Without Full Access Control. See Part 540 of the *Illinois Administrative Code* (contact BDE).

2. State Highways with Full Access Control. For criteria on State highways with full access control, contact BDE.

5-5.02(j) Overpass Fencing

Part 510 of the *Illinois Administrative Code* (contact BDE) presents the proration of construction costs and the warrants and maintenance responsibilities for overpass fencing.

5-5.02(k) Transportation Enhancements

Chapter 18 discusses proration of costs for Transportation Enhancement Projects.

5-5.02(l) Engineering

The Municipality will share in the cost of engineering provided by the State in direct proportion to its construction costs. Preliminary and construction engineering will be computed as 5% and 10% respectively of the Municipal share of construction costs.

5-5.02(m) Right-of-Way

If the Municipality is financially responsible for all or a portion of right-of-way costs, its share will include the purchase price thereof and the cost of negotiators, appraisals, title evidence, relocation assistance and payments, property management, and such legal services as necessary to acquire the right-of-way. The acquiring agency, if participating in the cost of the right-of-way, will receive a credit for a proportionate amount of the proceeds of any sale or rental of improvements acquired within the right-of-way or as a direct result of the right-of-way acquisition.

5-5.02(n) Municipal Streets

Many State-initiated projects require improvements to intersecting Municipal streets to meet the geometric requirements for the design level of service. Generally, the State is financially responsible for all improvements required to achieve this goal. Any work beyond that deemed necessary by the State will be included in the State's contract only if the Municipality agrees to pay its cost.

5-5.02(o) Other Work

Municipalities will bear all additional costs of improvements outside the traffic lanes including utility adjustments, curb or curb and gutter repair, drainage structure adjustments, sidewalks, traffic signal installation or modernization, and entrance reconstruction, except as otherwise noted in Section 5-5.02.

5-5.03 Basis of Payment

5-5.03(a) Municipality Reimbursement

For Agreements where the Municipality is reimbursing the State, the Agreement or Funding Resolution must clearly delineate when and how the Municipality will reimburse the State. The Central Office Bureau of Construction will bill the Municipality directly after the award of the contract in accordance with the terms specified in the Agreement. Several alternative repayment methods are available as follows:

1. Payment Upon Project Completion. Payment is made upon completion of the project provided the Municipality's share does not exceed $10,000.

2. Payment Upon Contract Award. A 95% payment is made upon contract award with any balance paid upon completion.

3. Equal Monthly Payments. Equal monthly payments are made based upon Equation 5-5.3 as follows:

$$\text{Monthly Payment} = \frac{0.95\ (\text{Estimated Municipal Share})}{\text{Contract Duration in Months}} \qquad \text{Equation 5-5.3}$$

The Municipality will send its final payment upon project completion.

4. Progress Payments. Progress payments are made based upon Equation 5-5.4 as follows:

$$\text{Progress Payment} = \frac{\text{Total Municipal Share}}{\text{Total Construction Cost}}\ (\text{Actual Progress Payment}) \qquad \text{Equation 5-5.4}$$

5. Dual Payment. A dual payment is based upon a 50% payment upon award with the remaining 50% paid upon completion. This payment alternative is limited to projects with a duration of 60 working days or less.

Example 6 in Section 5-8 illustrates a sample resolution.

5-5.03(b) State Reimbursement

It should be stated in the Agreement specifically when and how the State will reimburse the Municipality. Once the Agreement is fully consummated, BDE will process the necessary Contract Obligation Documents (COD) and forward a copy of the completed document to the district for use in its processing of invoices. Any one of the five alternatives presented in Section 5-5.03(a) for Municipality reimbursement can be applied similarly to State reimbursement. For an Agreement involving State reimbursement to be eligible for execution, the State's funding must be included in the current annual program or be approved as an exception by BDE and Statewide Program Planning. The Agreement must include specific language giving the State the right to approve the plans and specifications prior to advertisement for bids and to concur in the award of the contract.

5-5.04 Right-of-Way Acquisition

Under Section 605 ILCS 5/4-501 of the *Illinois Compiled Statutes*, the only governmental unit authorized to take title in its own name for a State highway improvement is the Department or any County, regardless of how the cost of the right-of-way is treated.

Accordingly, Agreements covering joint improvements with governmental units other than Counties shall provide that all right-of-way required for the improvement be acquired in the name of the State.

Although under the Statute a County can take title in its own name for land required for a State highway improvement, the Department will take this title in the name of the State for adequate control of the highway and more effective title approval.

5-6 OTHER AGREEMENTS

5-6.01 Jurisdictional Transfers

Improvement of an unmarked, State-maintained highway may involve a transfer of jurisdictional responsibility from the State to a local highway authority (i.e., a Jurisdictional Transfer). A marked route may also be transferred provided the marking is removed first. An Agreement using the Developed Format and executed by the Director of Highways is necessary for a Jurisdictional Transfer. See the Bureau of Local Roads and Streets publication *Jurisdictional Transfer Guidelines* for specific guidance. Example 7 in Section 5-8 illustrates a sample Jurisdictional Transfer Agreement.

5-6.02 Supplemental or Addendum Agreements

Use Supplemental Agreements to add provisions to the original Agreement. Use an Addendum Agreement to change rather than add to the original Agreement's provisions.

5-6.03 County and Township Agreements

County/Township Agreements are most commonly required for improvements on unmarked routes involving a Jurisdictional Transfer or intersection improvement where one party is participating (as defined in Section 5-1.01) toward the second party's project.

The procedures for Agreements with Municipalities generally apply to County/Township Agreements, except as follows:

1. Agreement Format. Section 5-8 illustrates the Developed Format for County/Township Agreements.

2. Maintenance Obligations. Use the following guidelines for maintenance obligations in County/Township Agreements:

   - The procedures presented in Sections 5-3.01, 5-3.02, 5-3.03, 5-3.08, and 5-3.09 are not applicable to County/Township Agreements.

   - For storm sewers and appurtenances, the State will maintain all storm sewers it constructs outside a Municipality except joint-use systems constructed at local request. Proportion the joint-use sewer's maintenance and/or reconstruction costs the same as the sewer's initial construction cost was proportioned.

   - For traffic signals and lighting, the State will maintain and pay the electrical energy for all traffic signals and lighting it deems necessary and constructs outside the corporate limits of a Municipality.

3. Restrictions/Encroachments. The information presented in Sections 5-4.01, 5-4.02, and 5-4.03 are not applicable to County/Township Agreements.

4. Division of Cost. The information in Sections 5-5.02(a), 5-5.02(c), and 5-5.02(h) are not applicable to County/Township Agreements.

5-6.04 Private Benefit Agreements

Private Benefit Agreements generally are needed where large traffic generators (e.g., shopping centers, factories) require special features (e.g., turn lanes, channelization, traffic signals) along a State highway to safely accommodate the increased traffic volume generated by the facility. Dedicated public roads which essentially provide access to developments (e.g., shopping centers, industrial, institutional, office sites) should be considered as private benefit roads in lieu of public roads. See Subchapter f, Part 550 of the *Illinois Administrative Code* and the Bureau of Operations publication TRA-5 for participation requirements.

The requisite Agreement should follow the procedures contained in Sections 5-1.01, 5-1.02, 5-1.03, 5-2.01, 5-2.02, 5-2.03, 5-4.04, 5-5.02(e) (Items 2 and 3), 5-5.02(j), and 5-5.02(k) and incorporate the following special considerations:

1. Letter of Credit. Except under extraordinary conditions approved by the Bureau Chief of BDE, all Private Benefit Agreements will include an irrevocable Letter of Credit. The Letter of Credit protects the State's interest by guaranteeing payment should the Private Benefit Organization (PBO) default.

2. Utility Adjustments. The PBO is financially responsible for all utility adjustments caused by highway improvements constructed for the PBO.

3. Right-of-Way. Any right-of-way required solely for PBO highway improvements will be provided at no expense to and as acceptable to the State. If the State must acquire the right-of-way, then the PBO will reimburse the State for its cost.

5-7 OTHER DOCUMENTS

5-7.01 Letters of Understanding

Improvements that do not involve local participation may at times be covered by Letters of Understanding. A Letter of Understanding may be used to delineate maintenance responsibilities (e.g., parking lanes, curbs and gutter flags, sidewalks, manholes, catch basins, storm sewers, traffic signals, utilities, appurtenances). Many of the provisions of an Agreement should be included in a Letter of Understanding such as ordinances for sewer, parking, and encroachments; provisions for curb ramps and plan approval; etc.

The district will prepare the Letter of Understanding. Include in the Letter of Understanding a brief description of the proposed project and describe the responsibilities of both parties. Also include a description of any needed ordinances from the Local Agency. For convenience, the district staff will provide the Local Agency with sample ordinance forms.

The Letter of Understanding will be prepared by district staff in duplicate counterparts, signed by the district engineer, and transmitted to the Local Agency with the request that one of the counterparts with the district engineer's signature and the local official's signature be returned to the district. As an option, where there is Local Agency reluctance to sign the document as presented, it may be advisable to request the Local Agency to sign the document first, thus avoiding the possibility of the Local Agency altering the fully executed Letter of Understanding in an unacceptable manner. The district staff shall file the counterpart with original signatures in the district and forward a copy to BDE. In addition, the report to BDE on projects available for letting should include a statement regarding the status of the Letters of Understanding. The district will secure copies of the required ordinances and plan approval from the Local Agency prior to advertising for letting and will notify BDE when all ordinances have been received for the improvement. The Project Support Engineer or staff will file the ordinances in the district office.

5-7.02 Informational Letters

Informational Letters may be used on any project not requiring a formal Agreement where no changes in maintenance or other responsibilities from previously executed Agreements or Letters of Understanding will occur. The district will send the Informational Letter to the local official via certified or registered mail to verify receipt. For content, the document should advise the Local Agency of the improvement scope and anticipated letting and completion dates, and indicate that the covenants contained in previous Agreements or Letters of Understanding relating to jurisdiction, maintenance, electrical energy, enactment of ordinances, etc., will remain unchanged.

It will not be necessary to forward a copy of the document to BDE; however, the district should modify the Certification Acceptance sheet to designate that an Informational Letter rather than a Letter of Understanding will be used.

5-8 EXAMPLES

The following Examples present samples and guidelines for use when processing Local Agency Agreements.

Example 1 – Developed Agreement for Local Agencies

Example 2 – Parking Ordinance

Example 3 – Storm Sewer Ordinance

Example 4 – Encroachment Ordinance

Example 5 – Off-Street Replacement Parking Guidelines

Example 6 – Funding Resolution

Example 7 – MFT Funding Resolution for Improvement by County (BLR 4101)

Example 8 – MFT Funding Resolution for Improvement by Municipality (BLR 4103)

Example 9 – Agreement for Jurisdictional Transfers

EXAMPLE 1 — Developed Agreement for Local Agencies

_____Route _____

Section _____

(VILLAGE, CITY, COUNTY, TOWNSHIP) Section _____

County _____

Job No. _____

Agreement No. _____

Contract No. _____

AGREEMENT

This agreement entered into this ____ day of _____, A.D., 20____, by and between the STATE OF ILLINOIS, acting by and through its DEPARTMENT OF TRANSPORTATION hereinafter called the STATE, and the _____ of _____, of the State of Illinois, hereinafter called the (VILLAGE, CITY, COUNTY, or TOWNSHIP).

WITNESSETH:

WHEREAS, the STATE in order to facilitate the free flow of traffic and insure safety to the motoring public, is desirous of improving approximately ____ foot (____lineal meters) of _____ Street, (FA/SBI Route _____ US/Illinois/CH Route _____, State Section _____, (VILLAGE, CITY,COUNTY, TOWNSHIP) Section_____ by (widening, milling, resurfacing. reconstructing) US/Illinois/CH Route _____ from _____ Street to _____Street, providing _____ foot (_____meter) through traffic lanes in each direction, a _____ foot (____meter) median with _____ foot (____meter) and variable width left turn lanes at _____ and _____ Streets, (milling, resurfacing, constructing) _____ foot (____ meter) wide parking lanes on _____ side(s) of _____ Street between _____ Street and _____ Street, (modernizing, installing) traffic signals at the _____ Route _____ intersections with _____ and _____ Streets, installing a highway lighting system between _____ and _____ Streets, constructing new 5 foot (1.52 meter) PCC sidewalks from _____ Street to _____ Street, constructing curb and gutter and a storm sewer system for highway drainage and by performing all other work necessary to complete the improvement in accordance with the approved plans and specifications; and

WHEREAS, the (VILLAGE, CITY, COUNTY, TOWNSHIP) is desirous of said improvement in that same will be of immediate benefit to the (VILLAGE, CITY, COUNTY, TOWNSHIP) residents and permanent in nature;

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the parties hereto agree as follows:

1. The STATE agrees to make the surveys, obtain all necessary rights of way, prepare plans and specifications, receive bids and award the contract, furnish engineering inspection during construction and cause the improvement to be built in accordance with the plans, specifications and contract.

2. The STATE agrees to pay for all right-of-way, construction and engineering costs, including the cost of railroad adjustments, subject to reimbursement by the (VILLAGE, CITY, COUNTY, TOWNSHIP) as hereinafter stipulated. The STATE will negotiate and/or coordinate with the Railroad for the adjustment of their railroad facilities.

3. It is mutually agreed by and between the parties hereto that the estimated cost and cost proration for this improvement is as follows:

Type of Work	State		Village, City, County, Township		Total
	Cost	%	Cost	%	
All construction costs excluding the following:	$	100	NA	NA	$
Mill and resurface parking lanes	$	50	$	50	$
Patch parking lanes	NA	NA	$	100	$
Traffic signals at _____ Street	$	90	$	10	$
Sidewalks	$	50	$	50	$
New highway lighting	NA	NA	$	100	$
Relocate water main at _____ Street	NA	NA	$	100	$
Sub Total	$		$		$
P&C Engineering 15%	$		$		$
Right of way	$	100	NA	NA	S
Total	$		$		$

Participation and reimbursement shall be predicated by the percentages shown above for the specified work. Cost shall be determined by multiplying the final quantities times contract unit prices plus 15% for construction and preliminary engineering. Participation toward the traffic signals and watermain relocation shown above shall not exceed $_____ which represents 125% of their estimated construction and engineering cost.

(If the local agency is to acquire right of way, at its own cost and expense or at the cost and expense of the state, in whole or in part, use the following paragraphs and make appropriate changes in paragraphs 1, 2, and 3).

4. The (VILLAGE, CITY, COUNTY, TOWNSHIP) agrees to obtain and pay for the cost of acquiring the necessary right of way in accordance with the following requirements:

A. Right of way shall be acquired in the name of the STATE on standard State forms which will be provided for that purpose in accordance with Land Acquisition Policies and Procedures of the STATE.

B. No award of a contract shall be made to cover construction of the project or any part thereof without first having been made a title approval by the Attorney General of Illinois on each individual parcel of right of way, the consideration for which exceeds $10,000, including within such construction. A title approval shall be made by the STATE on each parcel of right of way acquired for the project where the consideration is $10,000 or less. In the event acquisition of the right of way is by condemnation, then such action must be brought in the name of the State by the Attorney General and an Assistant Attorney General appointed by him.

C. Cost of the right of way shall include the purchase price thereof as well as the cost of negotiators, appraisals, title evidence, relocation assistance and payments, property management and such legal service as may be necessary to acquire said right of way. The acquiring agency, if participating in the cost of the right of way shall receive a credit for a proportionate amount of the proceeds of any sale or rental of improvements acquired within the right of way or as a direct result of the right of way acquisition.

D. All parties engaged in the acquisition of the right of way shall be approved in advance by the STATE.

E. Appraisals (use Item (1) or (2) as appropriate):

(1) Appraisals shall be reviewed and a negotiating figure approved by the STATE in advance of negotiations for the purchase of said right of way.

(2) The (VILLAGE, CITY, COUNTY, TOWNSHIP) shall provide a sufficient number of qualified reviewing appraisers approved by the STATE. The STATE shall approve the appraisal process in advance of negotiations for the purchase of said right of way.

F. Any phase of the STATE's Relocation Assistance Procedures to be performed by any qualified agency other than the STATE shall be covered by separate contractual agreement or agreements with the agency and are subject to prior approval of the Division Administrator of the Federal Highway Administration.

G. The STATE shall provide such guidance, assistance and supervision and monitor and perform audits to the extent necessary to assure compliance with the STATE's Land Acquisition Policies and Procedures.

(If the local agency is to acquire right of way off the State highway system and there are Federal funds being used for any portion of the project, not just land acquisition, use the following paragraph. Please note, on those occasions when more than one land acquisition condition exists, all appropriate provisions that apply must be included.)

4a. The _____agrees to acquire in its name and at its own expense, subject to reimbursement as hereinafter provided, all right of way necessary for this project in accordance with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. The requirements of Title II and Title III shall be carried out in accordance with established State Policies and Procedures, as now or hereafter revised or amended. Prior to the State's advertising for bids, the local agency shall certify to the STATE that all requirements of Titles II and III of said Uniform Act have been compiled with.

A. The STATE will advertise for bids for the construction of the proposed improvement after the local agency's certification as to compliance with Titles II and III requirements have been accepted by the STATE and subject to approval by the Division Administrator of the Federal Highway Administration.

B. The STATE shall provide such guidance, assistance and supervision and monitor and perform audits to the extent necessary to assure validity of the local agency's certification of compliance with Titles II and III requirements of the aforesaid Act.

5. The (VILLAGE, CITY, COUNTY, TOWNSHIP) has passed a resolution appropriating sufficient funds to pay its share of the cost for this improvement, a copy of which is attached hereto as "Exhibit____" and made a part hereof.

(For Local's use of non-MFT funds for reimbursement, include one of the following.)

The (VILLAGE, CITY, COUNTY, TOWNSHIP) further agrees

a. ***(Payment upon Completion)*** that upon completion of the contract for this improvement, the _____ will pay to the DEPARTMENT OF TRANSPORTATION of the STATE OF ILLINOIS in a lump sum for any funds allotted to the _____ an amount equal to 100% of its obligation incurred under this AGREEMENT.

b. ***(95% Payment upon Award)*** that upon award of the contract for this improvement, the _____ will pay to the DEPARTMENT OF TRANSPORTATION of the STATE OF ILLINOIS in a lump sum from any funds allotted to the _____, an amount equal to 95% of its obligation incurred under this AGREEMENT, and will pay to the said DEPARTMENT the remainder of the obligation (including any non-participating costs on FA Projects) in a lump sum, upon completion of the project based upon final costs.

c. ***(Monthly Payments)*** that upon award of the contract for this improvement, the _____ will pay to the DEPARTMENT OF TRANSPORTATION of the STATE OF ILLINOIS from any funds allotted to the _____, the amount of $_____ each month for a period of approximately _____ months or until 95% of the estimated obligation under the provisions of the AGREEMENT has been paid, and will pay to the said DEPARTMENT the remainder of its obligation (including

any non-participating costs on FA projects) in a lump sum upon completion of the project based upon final costs.

d. *(**Progress Payments**)* that upon receipt of the first and subsequent progress payments made to the CONTRACTOR, the _____ will pay to the DEPARTMENT OF TRANSPORTATION of the STATE OF ILLINOIS from any funds allotted to the _____ an amount equal to the _____ share, $_____, divided by the estimated construction costs, $_____, multiplied by the actual progress payment (appropriately adjusted for non-participating costs on FA projects) made to the CONTRACTOR until the entire obligation incurred under this AGREEMENT has been paid.

e. *(**Dual Payment**)* that upon award of the contract for this improvement, the _____ will pay to the DEPARTMENT OF TRANSPORTATION of the STATE OF ILLINOIS from any funds allotted to the _____, an amount equal to 50% of its obligation incurred under this AGREEMENT, and will pay to the said DEPARTMENT the remainder of the obligation (including any non-participating costs on FA projects) in a lump sum, upon completion of the project based upon final costs.

(Include in all Local reimbursement Agreements where non-MFT funds are used and traffic signals are not a sole reimbursable items):

The (VILLAGE, CITY, COUNTY, TOWNSHIP) further agrees to pass a supplemental resolution to provide necessary funds for its share of the cost of this improvement if the amount appropriated in "Exhibit____" proves to be insufficient, to cover said cost.

6. The (VILLAGE, CITY) has adopted and will put into effect an appropriate ordinance, prior to the STATE's advertising for the proposed work to be performed hereunder, or shall continue to enforce an existing ordinance, requiring that parking be (parallel to the curbs) (prohibited) within the limits of this improvement, a copy of which is attached hereto as "Exhibit_____ ", and will in the future prohibit parking at such locations on or immediately adjacent to this improvement as may be determined necessary by the STATE from traffic capacity studies.

7. The (VILLAGE, CITY) has adopted and will put into effect an appropriate ordinance, prior to the STATE's advertising for the proposed work to be performed hereunder, or shall continue to enforce an existing ordinance, prohibiting the discharge of sanitary sewage and industrial waste water into any storm sewers constructed as a part of this improvement, a copy of which is attached hereto as "Exhibit_____ ".

8. Prior to the STATE advertising for the work proposed hereunder, the disposition of encroachments will be cooperatively resolved with representatives from the (VILLAGE, CITY) and the STATE.

The (VILLAGE, CITY) has adopted and will put into effect an appropriate ordinance, prior to the STATE's advertising for the proposed work to be performed hereunder, or shall continue to enforce an existing ordinance, relative to the disposition of encroachments and prohibiting, in the future, any new encroachments within the limits of the improvements, a copy of which is attached as "Exhibit_____".

(If the Local Agency is to perform any part of the work and/or engineering involved in the improvement, and the STATE is paying for or allowing credit for the work and/or engineering both of the following paragraphs (10 and 11) should be included):

9. The (VILLAGE, CITY, COUNTY, TOWNSHIP) shall maintain, for a minimum of (3,5) years after the completion of the Project, adequate books, records, and supporting documents to verify the amounts, recipients, and uses of all disbursements of funds passing in conjunction with this Agreement. All books, records, and supporting documents related to the Project shall be available for review and audit by the Auditor General and other State auditors and the (VILLAGE, CITY, COUNTY, TOWNSHIP) agrees to cooperate fully with an audit conducted by the Auditor General and other State Auditors and to provide full access to all relevant materials. Failure to maintain the books, records, and supporting documents required by this paragraph shall establish a presumption in favor of the STATE for the recovery of any funds paid by the STATE under this Agreement for which adequate books, records, and supporting documentation are not available to support their purported disbursement.

10. The (VILLAGE, CITY, COUNTY, TOWNSHIP) agrees to comply with all applicable Executive Orders and Federal Highway Acts pursuant to the Equal Employment Opportunity and non-discrimination regulations required by the U.S. Department of Transportation. (Non-Federal-aid projects use Illinois Department of Transportation in lieu of U.S.)

11. The (VILLAGE, CITY, COUNTY, TOWNSHIP) agrees not to permit driveway entrance openings to be made in the curb, as constructed, or the construction of additional entrances, private or commercial, along _____ Route _____ without the consent of the STATE.

12. The (VILLAGE, CITY, COUNTY, TOWNSHIP) shall exercise its franchise rights to cause private utilities to be relocated, if required, at no expense to the STATE.

13. The (VILLAGE, CITY, COUNTY, TOWNSHIP) agrees to cause its utilities installed on right of way after said right of way was acquired by the STATE or installed within the limits of a roadway after the said roadway's jurisdiction was assumed by the STATE, to be relocated and/or adjusted, if required, at no expense to the STATE.

(If the State contract includes the relocation or adjustment of a municipally owned utility, include the following paragraph):

14. All (VILLAGE, CITY) owned utilities, on STATE right of way within the limits of this improvement, which are to be relocated/adjusted under the terms of this Agreement, will be relocated/adjusted in accordance with the applicable portions of the "Accommodation of Utilities of Right of Way of the Illinois State Highway System." (92 Ill. Adm. Code 530).

15. The (VILLAGE/CITY) agrees to obtain from the STATE an approved permit for the facility, and to abide by all conditions set forth therein.

16. Upon final field inspection of the improvement and so long as (Street Name) ____is used as a State Highway, the STATE agrees to maintain or cause to be maintained the median, the _____ through traffic lanes lying _____ on either side of the (median), (centerline) and the left-turn and right-turn lanes, each lane being _____ feet (_____meters) and variable in width, and

the curb and gutter or stabilized shoulders and ditches adjacent to those traffic lanes and turn lanes to be maintained by the STATE.

17. Upon final field inspection of the improvement, the (VILLAGE, CITY, COUNTY, TOWNSHIP) agrees to maintain or cause to be maintained those portions of the improvement which are not maintained by the STATE, including parking lanes and their adjacent curb and gutter, sidewalks, parkways, guardrails, crosswalk and stopline markings, (VILLAGE, CITY, COUNTY, TOWNSHIP) owned utilities including appurtenances thereto, highway lighting including furnishing the electrical energy therefore and shall maintain the storm sewers and appurtenances by:

NOTE: INSERT A OR B AS APPROPRIATE.

(A) Applicable when storm sewer system constructed for State highway drainage only:

performing those functions necessary to keep the sewer in a serviceable condition including cleaning sewer lines, inlets, manholes, and catch basins along with the repair or replacement of inlet, manhole and catch basins' frames, grates or lids. The maintenance, repair and/or reconstruction of storm sewers constructed as part of this improvement beyond the aforedescribed responsibilities shall be that of the STATE.

(B) Applicable when storm sewer system constructed as a joint LA and State use facility:

performing those functions necessary to keep the sewer in a serviceable condition including cleaning sewer lines, inlets, manholes and catch basins along with the repair or replacement of inlet, manholes and catch basins' frames, grates or lids. The STATE shall share cost of the maintenance, except as aforedescribed, repair and/or reconstruction of the joint use sewer(s) to the same proportioning as the sewers initial construction costs.

The (VILLAGE, CITY, COUNTY, TOWNSHIP) further agrees to continue its existing maintenance responsibilities on all side road approaches under its jurisdiction, including all left and right turn lanes on said side road approaches, up to the through edge of pavement of US/Illinois/CH Route _____. Drainage facilities, if any, at the aforementioned side roads located within the STATE right-of-way shall be the joint maintenance responsibility of the

STATE and the (VILLAGE, CITY, COUNTY, TOWNSHIP) unless there is an agreement specifying different responsibilities.

FOR TRAFFIC SIGNALS - USE 18a, 18b, 18c WHERE APPROPRIATE.

(Verbiage For Installation And/Or Modernization Projects Where No Master Agreement Exists.)

18a. Upon acceptance by the STATE of the traffic signal work included herein, the financial responsibility for the maintenance and electrical energy charges for the operation of the traffic signal(s) shall be proportioned as follows:

Intersection	**Maintenance**	**Electrical Energy**
_____Route _____		
@ _____ Street		
STATE Share	( )%	( )%
CITY or VILLAGE Share	( )%	( )%

(Share percentages are determined from Appendix C.)

It is mutually agreed that the actual traffic signal maintenance will be performed by the (STATE, CITY or VILLAGE), either with its own forces or through an ongoing contractual agreement. It is further mutually agreed that the traffic signals shall be maintained to the standard described in the 2000 Edition of the Illinois Manual of Uniform Traffic Control Devices, Part 4, Section 4D.02 a copy of which is attached hereto as "Exhibit_____" and made a part hereof.

(The following paragraph is needed only when a City or Village maintains the signals.)

It is also understood that if, in the judgment of the STATE, the (CITY or VILLAGE) has not provided adequate maintenance for those traffic signals which it has been assigned to maintain, the STATE will, upon giving 30 days written notice, arrange for the appropriate maintenance efforts and bill the (VILLAGE or CITY) for its share of the costs.

The (STATE, VILLAGE or CITY) agrees to bill the (STATE, VILLAGE, or CITY) for its proportionate share of the traffic signal maintenance costs on a three-month basis. The amount

billed shall be the actual costs incurred less any third party damage claims received during the billing period for repair of traffic signals that are the responsibility of the billed party.

Any proposed expenditure in excess of $5,000 for repair of damage to any single traffic signal installation must be approved by the billed party before the expenditure is made. The STATE reserves the right to examine the records of the (VILLAGE or CITY) to determine that costs billed are fully documented.

The STATE agrees to make arrangements with the local power company to furnish the electrical energy for the operation of the traffic signals. The (STATE, CITY or VILLAGE) agrees to pay their proportionate share of this cost as billed by the local power company.

The STATE retains the right to control the sequence and timing of the traffic signals.
Payment by the STATE of any or all of its share of maintenance and energy costs is contingent upon the STATE receiving adequate funds in its annual appropriation.

The parties hereto agree that the traffic signal maintenance and energy provisions of this Agreement shall remain in effect for a period of twenty (20) years from the date of its execution or so long as the traffic signals covered by the terms of this Agreement or any amendment hereto remain in place either in their current or some modified configuration, whichever, is the shorter period of time. Such an effective term shall apply unless otherwise agreed in writing by the parties hereto.

(Verbiage for Modernization Project Where Master Agreement Exists.)

18b. Upon acceptance by the STATE of the traffic signal work included herein the responsibility for maintenance and energy shall continue to be as outlined in the Master Agreement executed by the STATE and the (CITY/VILLAGE) on _____ 20 _____.

(Verbiage for Installation Project Where Master Agreement Exists.)

18c. Upon acceptance by the STATE of the new traffic signal installation(s), the financial responsibility for maintenance and electrical energy for the operation of the traffic signals shall be proportioned as follows:

Intersection	Maintenance	Electrical Energy
_____Route _____		
@ _____ Street		
STATE Share	( )%	( )%
CITY or VILLAGE Share	( )%	( )%

(Share percentages are determined from Part 544 of Title 92, Illinois Administrative Code.)

It is mutually agreed that the actual traffic signal maintenance will be performed by the (STATE, CITY or VILLAGE), either with its own forces or through an ongoing contractual agreement.

It is further agreed that the traffic signal shall be maintained to at least the Levels of Maintenance shown in the Illinois Manual of Uniform Traffic Control Devices, Part 4, Section 4D.02, a copy of which is attached hereto as "Exhibit_____" and made a part hereof.

Upon acceptance by the STATE of the new traffic signal installation(s) included herein, the responsibility for maintenance and energy outlined above shall become a part of the Master Agreement executed by the State and the (CITY/VILLAGE) on _____ 20 _____.

(The following paragraph should be included when an agreement involves both new signal installations, as above, and the modernization or modifications of existing signals.)

19. Upon acceptance by the STATE of the work proposed herein on existing signals, the responsibility for maintenance and energy shall continue to be as outlined in the aforementioned Master Agreement.

20. The STATE agrees to make arrangements with the local power company to furnish the electrical energy for the operation of the traffic signals. The (STATE, CITY or VILLAGE) agrees to pay their proportionate share of this cost as billed by the local power company.

(If the Local Agency Is To Provide Engineering, Materials, And/Or Let The Contract On A Federal-aid Project, Then The Following Covenant Must Be Included.)

21. The (VILLAGE, CITY, COUNTY, TOWNSHIP), subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The (VILLAGE, CITY, COUNTY, TOWNSHIP) shall carry out applicable requirements of 49 CFR part 26 in the award and administration of STATE-assisted contracts. Failure by the (VILLAGE, CITY, COUNTY, TOWNSHIP) to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the STATE deems appropriate.

22. The (VILLAGE, CITY, COUNTY, TOWNSHIP) agrees to provide written approval of that portion of the plans and specifications relative to the (VILLAGE, CITY, COUNTY, TOWNSHIP) financial and maintenance obligations described herein, prior to the STATE's advertising for the aforedescribed proposed improvement.

23. Obligations of the STATE and (VILLAGE, CITY, COUNTY, TOWNSHIP) will cease immediately without penalty or further payment being required if, in any fiscal year, the Illinois General Assembly or Federal funding source fails to appropriate or otherwise make available funds for this contract.

24. This AGREEMENT and the covenants contained herein shall be null and void in the event the contract covering the construction work contemplated herein is not awarded within the three years subsequent to execution of the agreement.

This agreement shall be binding upon and to the benefit of the parties hereto, their successors and assigns.

NOTE: THIS SIGNATURE IS TO BE UTILIZED IF THE LOCAL AGENCY REIMBURSES THE STATE $50,000 OR LESS.

_____ of _____

Attest:

By: _____

_____
Clerk

TITLE: _____

Date: _____

(SEAL)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

By: _____
District Engineer

Date: _____

NOTE: THIS SIGNATURE IS TO BE UTILIZED IF THE LOCAL AGENCY REIMBURSES THE STATE MORE THAN $50,000 OR THE STATE REIMBURSES THE LOCAL AGENCY IS LESS THAN $250,000.

_____ of _____

Attest:

By: _____

_____
Clerk

TITLE: _____

(SEAL)

Date: _____

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

By: _____
Director of Highways

Date: _____

NOTE: THIS SIGNATURE FORMAT IS TO BE UTILIZED IF THE STATE REIMBURSES THE LOCAL AGENCY IS MORE THAN $250,000.

_____ of _____

Attest:

By: _____

_____
Clerk

TITLE: _____

(SEAL)

Date: _____

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

By: _____
Secretary

Date: _____

By: _____
Director - Finance & Administration

Date: _____

By: _____
Director – Division of Highways

Date: _____

By: _____
Chief Counsel

Date: _____

EXAMPLE 2 — Parking Ordinance

Route _____

State Section _____

"Exhibit _____"

AN ORDINANCE IN RELATION TO

MOTOR VEHICLE PARKING

BE IT ORDAINED BY THE _____ OF _____ OF THE COUNTY OF _____ ILLINOIS THAT:

Section 1: It shall be unlawful for any person, firm or corporation to park any motor vehicle within the area of _____ Street from _____ to _____.

Section 2: Any person, firm or corporation violating the provisions of this Ordinance shall be fined not less than $ _____ nor more than $ _____ for each offense.

Section 3: This ordinance shall take effect and be in full force _____ days after its passage, approval and legal publication as required by law, and the _____ Clerk is hereby directed to cause this Ordinance to be published immediately after its due passage and approval.

Passed this _____ day of _____, 20___

_____

(Title)

Attest .

_____

_____ Clerk

PASSED: _____

SIGNED: _____

PUBLISHED: _____

EXAMPLE 3 — Storm Sewer Ordinance

"Exhibit _____"

AN ORDINANCE PROHIBITING THE DISCHARGE
OF SANITARY SEWAGE AND INDUSTRIAL WASTE WATER
INTO THE STORM SEWERS OR DRAINAGE FACILITY CONSTRUCTED IN CONJUNCTION
WITH THE IMPROVEMENT OF _____ ROUTE _____
IN THE _____ OF_____, _____ COUNTY, ILLINOIS

WHEREAS, the State of Illinois, through its Department of Transportation and the_____ of _____a municipal corporation, have entered into an AGREEMENT for the improvement of _____ known as State Section _____ and

WHEREAS, this improvement includes the construction of storm sewers and/or appurtenances for highway drainage;

NOW, THEREFORE, BE IT ORDAINED BY THE _____ OF _____, ILLINOIS:

Section 1: It shall be unlawful for any person, firm or corporation to connect or cause to be connected any drain carrying or to carry any toilet, sink, basement, septic tank, cesspool, industrial waste or any fixture or device discharging polluting substances into any storm sewers constructed as part of this improvement.

Section 2: Any person, firm or corporation violating this ordinance shall be fined not less than $_____ nor more than $_____ for each offense and separate offense shall deem to be committed each and every day during which a violation continues or exists.

Section 3: This Ordinance shall be in effect from and after its passage, approval, and publication as provided by law.

BE IT FURTHER ORDAINED, that the _____ of _____ does hereby authorize and empower the _____ to execute this Ordinance on behalf of the _____ of _____, and

BE IT FURTHER ORDAINED, that the _____ Clerk is hereby directed to transmit three (3) certified copies of this Ordinance to the Illinois Department of Transportation through the District Engineer's office in _____, Illinois.

ATTEST

_____

PASSED: _____
SIGNED: _____
PUBLISHED: _____

STATE OF ILLINOIS)
)
COUNTY OF_____)

I, _____, _____ Clerk in and for the _____ of _____, hereby certify the foregoing to be a true perfect and complete copy of the resolution adopted by the _____ at a meeting on _____, 20__.

IN TESTIMONY WHEREOF, I have hereunto set my hand seal this _____ day of _____ AD, 20_____.

_____
_____ Clerk

EXAMPLE 4 — Encroachment Ordinance

"Exhibit _____"

AN ORDINANCE REGULATING ENCROACHMENT
ON PUBLIC RIGHT OF WAY IN THE _____ OF _____
_____ COUNTY, ILLINOIS

WHEREAS, the _____of _____ hereinafter known as _____, and the State of Illinois, acting by and through its Department of Transportation, have entered into an agreement relative to the improvement of _____ Street (_____Route _____, State Section _____, _____ Section_____) From _____ to _____; and

WHEREAS, in order to facilitate said improvement, it is necessary for the _____ to adopt an ordinance regulating encroachments on the right of way for said improvement in accordance with the following definitions:

1. Roadway Right of way is defined as those areas existing or acquired by dedication or by fee simple for highway purposes; also, the areas acquired by temporary easement during the time the easement is in effect:

2. Project Right of way is defined as those areas within the project right-of-way lines established jointly by the _____ and the STATE which will be free of encroachments except as hereinafter defined;

3. Encroachment is defined as any building, fence, sign (excluding certain signs located over sidewalks) or any other public structure or object of any kind (with the exception of utilities and public road signs) which is placed, located, maintained, in, on, under or over any portion of the project right of way or the roadway right of way where no project right of way line has been established;

4. Permissible encroachment is defined as any existing awning, marquee or sign advertising activity on the property or similar overhanging structure supported from a building immediately adjacent to the limits of the platted street where there is sidewalk extending to the building line and which does not impair the free and safe flow of pedestrian traffic or

traffic on the highway. The permissive retention of overhanging signs is not to be construed as being applicable to those signs supported from poles constructed outside the project right of way line and not confined by adjacent buildings.

5. Construction easement Area is defined as the area lying between the project right of way limits and the platted street limits within which the _____, by concurrence with the establishment of the project right of way lines, will permit the STATE to enter to perform all necessary construction activities; and

WHEREAS, representatives of the _____ And the STATE have, by visual inspection, cooperatively established project right of way lines and have mutually determined the disposition of encroachments;

NOW, THEREFORE, BE IT ORDAINED, by the _____ of _____, County, Illinois:

Section 1: It shall be unlawful for any person, firm or corporation to erect, cause to be erected, to retain or cause to be retained any ENCROACHMENT (herein above defined), except as provided in Section 3, within the project right-of-way or roadway right of way where no project right-of-way lines have been established.

Section 2: Project right-of-way lines have been established at the following locations
Along the _____ side of _____ Street _____ feet (_____meter) _____the centerline of the proposed improvement from _____ to _____.

(No project right-of-way lines have been established.)

Section 3: Revocable permits have been issued by the _____ for the temporary retention of the following PERMISSIBLE ENCROACHMENT (hereinabove defined):

(No temporary permits have been issued.)

Section 4: This ordinance is intended to and shall be in addition to all other ordinances, rules and regulations concerning encroachments and shall not be construed as repealing or rescinding any other ordinance or part of any ordinance unless in direct conflict therewith.

Section 5: Any person, firm or corporation violating the provisions of this Ordinance shall be fined not less than $ _____ nor more than $ _____ for each offense, a separate offense shall be deemed committed for each and every day during which the violation continues or exists.

Section 6: This ordinance shall be published _____ time(s) within _____ days after its passage in the newspaper having a general circulation in the _____ of _____, Illinois, and shall be in full force and effect after its passage, publication and approval as provided by law.

Passed and approved this _____day of _____, 20___.

_____

(Title)

ATTEST

_____

_____Clerk

EXAMPLE 5 — Off-Street Replacement Parking Guidelines

Illinois Department of Transportation

Memorandum

To: All District Engineers

From: Ralph C. Wehner

Subject: Replacement Parking Guidelines

Date: September 10, 1991

The following set of guidelines were developed to allow the Department to participate in the construction of replacement urban parking facilities as part of an improvement which requires removal of on-street parking.

I. PURPOSE

To enable the District Engineer, at his discretion, to cooperate with a municipality to replace existing legal on-State system parking in useable segments with off-site parking spaces for the benefit of State highway capacity and safety.

II. ASSUMPTIONS

These guidelines assume that existing on-street parking cannot be accommodated by widening the existing parking lanes or by constructing new replacement parking adjacent to through traffic lanes. These conditions are covered in Section 1-400 of the Design Manual and require municipal financial participation. This incentive/disincentive should work to discourage on-street parking thus reducing the hazard and capacity problems associated with on street parking.

III. IMPLEMENTATION

Early involvement coordination with the affected municipality shall be accomplished in order to determine any significant social, economic, and environmental effects from both parking removal and replacement. Discussion of existing parking patterns should be made to determine replacement requirements based on actual needs rather than the existing number of available spaces. This information should be included in the appropriate location and environmental studies and reports together with estimated costs for parking replacement. Replacement off-street parking may be let as part of the roadway improvement or as a separate municipal contract.

IV. PARTICIPATION

The State will provide 100% of all engineering, right of way (except where replacement parking is constructed on municipally-owned property), and construction costs required to construct alternate (off-State system) parking on a maximum ratio of 1 to 1. Alternate parking can consist of improving adjacent local streets to provide parallel parking, the construction of off-street parking facilities, or combinations thereof. Construction costs shall include those items the State deems reasonable to provide parking facilities having a safe and convenient environment as is practical, including a paved surface, drainage, lighting, pedestrian walkways, and fencing. The construction and installation of guard and toll collection facilities, metering devices, and parking capacity beyond the maximum replacement ratio shall be totally the local agency's responsibility.

V. MAINTENANCE

The municipality shall enter into an Agreement with the State accepting complete jurisdiction of the parking facility(ies) including but not limited to its maintenance, operation, repair, reconstruction, and provision of electrical energy for lighting systems and striping. The municipality shall hold the State harmless from any suits arising from construction, operation, and maintenance of these parking facilities.

VI. RIGHT OF WAY

The municipality shall acquire or have acquired all rights of way and easements in its own name and shall provide the State with certification that it holds good and sufficient title to such property(ies).

Prior to the municipality acquiring the right of way:

A. The State shall, at its own expense, conduct a survey for potential hazardous wastes and shall notify the municipality of its acceptance or rejection of said site.

B. The municipality shall follow the procedures contained in the State's Land Acquisition Manual and provide the State with an estimate of right-of-way costs, including its purchase price plus fees associated with negotiators, appraisals, title evidence, and legal services for each potential parcel. The State shall be given an opportunity to accept or reject the parcel(s).

C. If the municipality owns the site selected for replacement parking, it shall provide same at no expense to the State. Clearing of municipally-owned property included in the State's construction contract shall be considered as part of the replacement parking construction cost and thus shall be at the expense of the State.

VII. ENFORCEMENT

The municipality shall agree to enact and enforce ordinances prohibiting parking at all locations where on-street parking is removed.

The municipality shall, unless approved by the State in writing, retain in public trust for a period of 20 years, all parking facilities constructed at State expense. The State shall not unreasonably withhold such approval, but will require prorata compensation for its initial expense in constructing the parking facilities as a condition of its approval.

Ralph C. Wehrman

RDM/jmb/2109M

cc: Allan Abbott
M. J. Macchio

EXAMPLE 6 — Funding Resolution

"Exhibit _____"

FUNDING RESOLUTION

WHEREAS, the _____ of _____ has entered into an AGREEMENT with the STATE OF ILLINOIS for the improvement of _____, known as State Section; _____ and

WHEREAS in compliance with the aforementioned AGREEMENT, it is necessary for the _____ to appropriate sufficient funds to pay its share of the cost of said improvement.

NOW, THEREFORE, BE IT RESOLVED, that there is hereby appropriated the sum of _____ dollars ($_____) or so much thereof as may be necessary, from any money now or hereinafter allotted to the _____ to pay its share of the cost of this improvement as provided in the AGREEMENT; and

BE IT FURTHER RESOLVED, that upon completion of the contract for this improvement, the _____ will pay the DEPARTMENT OF TRANSPORTATION, in lump sum from any funds allotted to the _____ an amount equal to 100% of its obligation incurred under this AGREEMENT.

BE IT FURTHER RESOLVED, that upon award of the contract for this improvement, the _____ will pay to the DEPARTMENT OF TRANSPORTATION of the STATE OF ILLINOIS in a lump sum from any funds allotted to the_____, an amount equal to 95% of its obligation incurred under this AGREEMENT, and will pay to the said DEPARTMENT the remainder of the obligation in a lump sum, upon completion of the projected based on final costs.

BE IT FURTHER RESOLVED, that upon award of the contract for this improvement, the _____ will pay to the DEPARTMENT OF TRANSPORTATION of the STATE OF ILLINOIS from any funds allotted to the_____, the amount of $_____ each month for a period of approximately _____ months or until 95% of its estimated obligation under the provisions of this AGREEMENT has been paid, and

will pay to the said DEPARTMENT the remainder of the obligation in a lump sum, upon completion of the projected based on final costs.

BE IT FURTHER RESOLVED, that upon receipt of the first and subsequent progress payments made to the CONTRACTOR, the _____ will pay to the DEPARTMENT OF TRANSPORTATION of the STATE OF ILLINOIS from any funds allotted to the _____, an amount equal to the _____share $_____ divided by the estimated construction costs, $_____, multiplied by the actual progress payment made to the CONTRACTOR until the entire obligation incurred under this AGREEMENT has been paid.

BE IT FURTHER RESOLVED, that upon award of the contract for this improvement, the _____ will pay to the DEPARTMENT OF TRANSPORTATION of the STATE OF ILLINOIS in a lump sum from any funds allotted to the_____, an amount equal to 50% of its obligation incurred under this AGREEMENT, and will pay to the said DEPARTMENT the remainder of the obligation in a lump sum, upon completion of the projected based on final costs.

BE IT FURTHER RESOLVED, that the _____ agrees to pass a supplemental resolution to provide any necessary funds for its share of the cost of this improvement if the amount appropriated herein proves to be insufficient, to cover said cost.

STATE OF ILLINOIS)
COUNTY OF _____)

I,_____, _____ Clerk in and for the _____ of _____, hereby certify the foregoing to be a true perfect and complete copy of the resolution adopted by the _____ at a meeting on _____, 20_____.

IN TESTIMONY WHEREOF, I have hereunto set my hand seal this _____ day of _____ AD, 20_____.

_____

(SEAL) _____ **Clerk**

EXAMPLE 7 — MFT Funding Resolution for Improvement by County (BLR 4101)

This is an attachment to the Agreement which may be accessed through the "FORMS" button in Word on the LAN under Bureau of Local Roads/Resolutions.

EXAMPLE 8 — MFT Funding Resolution For Improvement by Municipality (BLR 4103).

This is an attachment to the Agreement which may be accessed through the "FORMS" button in Word on the LAN under Bureau of Local Roads/Resolutions.

EXAMPLE 9 — Agreement for Jurisdictional Transfer

_____Route _____
Section _____
(VILLAGE, CITY, COUNTY, TOWNSHIP) Section _____
County _____
Job No. _____
Agreement No. _____
Contract No. _____

AGREEMENT

This agreement entered into this ____ day of _____, A.D., 20____, by and between the STATE OF ILLINOIS, acting by and through its DEPARTMENT OF TRANSPORTATION hereinafter called the STATE, and the _____ of _____, of the State of Illinois, hereinafter called the (VILLAGE, CITY, COUNTY, or TOWNSHIP).

WITNESSETH:

WHEREAS, the STATE in order to facilitate the free flow of traffic and insure safety to the motoring public, is desirous of improving approximately ____ foot (____lineal meters) of _____ Street, (FA/SBI Route _____ US/Illinois/CH Route _____, State Section _____, (VILLAGE, CITY,COUNTY, TOWNSHIP) Section_____ by (widening, milling, resurfacing. reconstructing) US/Illinois/CH Route _____ from _____ Street to _____Street, providing _____ foot (_____meter) through traffic lanes in each direction, a _____ foot (____meter) median with _____ foot (____meter) and variable width left turn lanes at _____ and _____ Streets, (milling, resurfacing, constructing) _____ foot (____ meter) wide parking lanes on _____ side(s) of _____ Street between _____ Street and _____ Street, (modernizing, installing) traffic signals at the _____ Route _____ intersections with _____ and _____ Streets, installing a highway lighting system between _____ and _____ Streets, constructing new 5 foot (1.52 meter) PCC sidewalks from _____ Street to _____ Street, constructing curb and gutter and a storm sewer system for highway drainage and by performing all other work necessary to complete the improvement in accordance with the approved plans and specifications; and

WHEREAS, the (VILLAGE, CITY, COUNTY, TOWNSHIP) is desirous of said improvement in that same will be of immediate benefit to the (VILLAGE, CITY, COUNTY, TOWNSHIP) residents and permanent in nature;

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the parties hereto agree as follows:

1. The STATE agrees to make the surveys, obtain all necessary rights of way, prepare plans and specifications, receive bids and award the contract, furnish engineering inspection during construction and cause the improvement to be built in accordance with the plans, specifications and contract.

2. The STATE agrees to pay for all right-of-way, construction and engineering costs, including the cost of railroad adjustments, subject to reimbursement by the (VILLAGE, CITY, COUNTY, TOWNSHIP) as hereinafter stipulated. The STATE will negotiate and/or coordinate with the Railroad for the adjustment of their railroad facilities.

3. It is mutually agreed by and between the parties hereto that the estimated cost and cost proration for this improvement is as follows:

Type of Work	State		Village, City, County, Township		Total
	Cost	%	Cost	%	
All construction costs excluding the following:	$	100	NA	NA	$
Mill and resurface parking lanes	$	50	$	50	$
Patch parking lanes	NA	NA	$	100	$
Traffic signals at _____ Street	$	90	$	10	$
Sidewalks	$	50	$	50	$
New highway lighting	NA	NA	$	100	$
Relocate water main at _____ Street	NA	NA	$	100	$
Sub Total	$		$		$
P&C Engineering 15%	$		$		$
Right of way	$	100	NA	NA	$
Total	$		$		$

Participation and reimbursement shall be predicated by the percentages shown above for the specified work. Cost shall be determined by multiplying the final quantities times contract unit prices plus 15% for construction and preliminary engineering. Participation toward the traffic signals and watermain relocation shown above shall not exceed $_____ which represents 125% of their estimated construction and engineering cost.

(If the agreement addresses a jurisdictional transfer, insert the following paragraph.)

4. The (VILLAGE, CITY, COUNTY, TOWNSHIP) and the State have agreed to the jurisdictional transfer of the portion of highway described in the Local Agency – State Jurisdictional Transfer document (BLR 1600), attached hereto as "Exhibit_____" and made a part hereof.

(If the local agency is to acquire right of way, at its own cost and expense or at the cost and expense of the state, in whole or in part, use the following paragraphs and make appropriate changes in paragraphs 1, 2, and 3.)

5. The (VILLAGE, CITY, COUNTY, TOWNSHIP) agrees to obtain and pay for the cost of acquiring the necessary right of way in accordance with the following requirements:

A. Right of way shall be acquired in the name of the STATE on standard State forms which will be provided for that purpose in accordance with Land Acquisition Policies and Procedures of the STATE.

B. No award of a contract shall be made to cover construction of the project or any part thereof without first having been made a title approval by the Attorney General of Illinois on each individual parcel of right of way, the consideration for which exceeds $10,000, including within such construction. A title approval shall be made by the STATE on each parcel of right of way acquired for the project where the consideration is $10,000 or less. In the event acquisition of the right of way is by condemnation, then such action must be brought in the name of the State by the Attorney General and an Assistant Attorney General appointed by him.

C. Cost of the right of way shall include the purchase price thereof as well as the cost of negotiators, appraisals, title evidence, relocation assistance and payments, property management and such legal service as may be necessary to acquire said right of way. The

acquiring agency, if participating in the cost of the right of way shall receive a credit for a proportionate amount of the proceeds of any sale or rental of improvements acquired within the right of way or as a direct result of the right of way acquisition.

D. All parties engaged in the acquisition of the right of way shall be approved in advance by the STATE.

E. Appraisals (use Item (1) or (2) as appropriate):

(1) Appraisals shall be reviewed and a negotiating figure approved by the STATE in advance of negotiations for the purchase of said right of way.

(2) The (VILLAGE, CITY, COUNTY, TOWNSHIP) shall provide a sufficient number of qualified reviewing appraisers approved by the STATE. The STATE shall approve the appraisal process in advance of negotiations for the purchase of said right of way.

F. Any phase of the STATE's Relocation Assistance Procedures to be performed by any qualified agency other than the STATE shall be covered by separate contractual agreement or agreements with the agency and are subject to prior approval of the Division Administrator of the Federal Highway Administration.

G. The STATE shall provide such guidance, assistance and supervision and monitor and perform audits to the extent necessary to assure compliance with the STATE's Land Acquisition Policies and Procedures.

(If the local agency is to acquire right of way off the State highway system and there are Federal funds being used for any portion of the project, not just land acquisition, use the following paragraph. Please note, on those occasions when more than one land acquisition condition exists, all appropriate provisions that apply must be included.)

5a. The _____agrees to acquire in its name and at its own expense, subject to reimbursement as hereinafter provided, all right of way necessary for this project in accordance with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. The requirements

of Title II and Title III shall be carried out in accordance with established State Policies and Procedures, as now or hereafter revised or amended. Prior to the State's advertising for bids, the local agency shall certify to the STATE that all requirements of Titles II and III of said Uniform Act have been compiled with.

A. The STATE will advertise for bids for the construction of the proposed improvement after the local agency's certification as to compliance with Titles II and III requirements have been accepted by the STATE and subject to approval by the Division Administrator of the Federal Highway Administration.

B. The STATE shall provide such guidance, assistance and supervision and monitor and perform audits to the extent necessary to assure validity of the local agency's certification of compliance with Titles II and III requirements of the aforesaid Act.

6. The (VILLAGE, CITY, COUNTY, TOWNSHIP) has passed a resolution appropriating sufficient funds to pay its share of the cost for this improvement, a copy of which is attached hereto as "Exhibit____" and made a part hereof.

(For Local's use of non-MFT funds for reimbursement, include one of the following.)

The (VILLAGE, CITY, COUNTY, TOWNSHIP) further agrees

a. ***(Payment upon Completion)*** that upon completion of the contract for this improvement, the _____ will pay to the DEPARTMENT OF TRANSPORTATION of the STATE OF ILLINOIS in a lump sum for any funds allotted to the _____ an amount equal to 100% of its obligation incurred under this AGREEMENT.

b. ***(95% Payment upon Award)*** that upon award of the contract for this improvement, the _____ will pay to the DEPARTMENT OF TRANSPORTATION of the STATE OF ILLINOIS in a lump sum from any funds allotted to the _____, an amount equal to 95% of its obligation incurred under this AGREEMENT, and will pay to the said DEPARTMENT the remainder of the obligation (including any non-participating costs on FA Projects) in a lump sum, upon completion of the project based upon final costs.

c. ***(Monthly Payments)*** that upon award of the contract for this improvement, the _____ will pay to the DEPARTMENT OF TRANSPORTATION of the STATE OF ILLINOIS from any funds allotted to the _____, the amount of $_____ each month for a period of approximately _____ months or until 95% of the estimated obligation under the provisions of the AGREEMENT has been paid, and will pay to the said DEPARTMENT the remainder of its obligation (including any non-participating costs on FA projects) in a lump sum upon completion of the project based upon final costs.

d. ***(Progress Payments)*** that upon receipt of the first and subsequent progress payments made to the CONTRACTOR, the _____ will pay to the DEPARTMENT OF TRANSPORTATION of the STATE OF ILLINOIS from any funds allotted to the _____ an amount equal to the _____ share, $_____, divided by the estimated construction costs, $_____, multiplied by the actual progress payment (appropriately adjusted for non-participating costs on FA projects) made to the CONTRACTOR until the entire obligation incurred under this AGREEMENT has been paid.

e. ***(Dual Payment)*** that upon award of the contract for this improvement, the _____ will pay to the DEPARTMENT OF TRANSPORTATION of the STATE OF ILLINOIS from any funds allotted to the _____, an amount equal to 50% of its obligation incurred under this AGREEMENT, and will pay to the said DEPARTMENT the remainder of the obligation (including any non-participating costs on FA projects) in a lump sum, upon completion of the project based upon final costs.

(Include in all Local reimbursement Agreements where non-MFT funds are used and traffic signals are not a sole reimbursable items):

The (VILLAGE, CITY, COUNTY, TOWNSHIP) further agrees to pass a supplemental resolution to provide necessary funds for its share of the cost of this improvement if the amount appropriated in "Exhibit____" proves to be insufficient, to cover said cost.

7. The (VILLAGE, CITY) has adopted and will put into effect an appropriate ordinance, prior to the STATE's advertising for the proposed work to be performed hereunder, or shall continue to enforce an existing ordinance, requiring that parking be (parallel to the curbs) (prohibited) within

the limits of this improvement, a copy of which is attached hereto as "Exhibit_____ ", and will in the future prohibit parking at such locations on or immediately adjacent to this improvement as may be determined necessary by the STATE from traffic capacity studies.

8. The (VILLAGE, CITY) has adopted and will put into effect an appropriate ordinance, prior to the STATE's advertising for the proposed work to be performed hereunder, or shall continue to enforce an existing ordinance, prohibiting the discharge of sanitary sewage and industrial waste water into any storm sewers constructed as a part of this improvement, a copy of which is attached hereto as "Exhibit_____ ".

9. Prior to the STATE advertising for the work proposed hereunder, the disposition of encroachments will be cooperatively resolved with representatives from the (VILLAGE, CITY) and the STATE.

The (VILLAGE, CITY) has adopted and will put into effect an appropriate ordinance, prior to the STATE's advertising for the proposed work to be performed hereunder, or shall continue to enforce an existing ordinance, relative to the disposition of encroachments and prohibiting, in the future, any new encroachments within the limits of the improvements, a copy of which is attached as "Exhibit_____".

(If the Local Agency is to perform any part of the work and/or engineering involved in the improvement, and the STATE is paying for or allowing credit for the work and/or engineering both of the following paragraphs (10 and 11) should be included):

10. The (VILLAGE, CITY, COUNTY, TOWNSHIP) shall maintain, for a minimum of (3,5) years after the completion of the Project, adequate books, records, and supporting documents to verify the amounts, recipients, and uses of all disbursements of funds passing in conjunction with this Agreement. All books, records, and supporting documents related to the Project shall be available for review and audit by the Auditor General and other State auditors and the (VILLAGE, CITY, COUNTY, TOWNSHIP) agrees to cooperate fully with an audit conducted by the Auditor General and other State Auditors and to provide full access to all relevant materials. Failure to maintain the books, records, and supporting documents required by this paragraph shall establish a presumption in favor of the STATE for the recovery of any funds paid by the

STATE under this Agreement for which adequate books, records, and supporting documentation are not available to support their purported disbursement.

11. The (VILLAGE, CITY, COUNTY, TOWNSHIP) agrees to comply with all applicable Executive Orders and Federal Highway Acts pursuant to the Equal Employment Opportunity and non-discrimination regulations required by the U.S. Department of Transportation. (Non-Federal-aid projects use Illinois Department of Transportation in lieu of U.S.)

12. The (VILLAGE, CITY, COUNTY, TOWNSHIP) agrees not to permit driveway entrance openings to be made in the curb, as constructed, or the construction of additional entrances, private or commercial, along _____ Route _____ without the consent of the STATE.

13. The (VILLAGE, CITY, COUNTY, TOWNSHIP) shall exercise its franchise rights to cause private utilities to be relocated, if required, at no expense to the STATE.

14. The (VILLAGE, CITY, COUNTY, TOWNSHIP) agrees to cause its utilities installed on right of way after said right of way was acquired by the STATE or installed within the limits of a roadway after the said roadway's jurisdiction was assumed by the STATE, to be relocated and/or adjusted, if required, at no expense to the STATE.

(If the State contract includes the relocation or adjustment of a municipally owned utility, include the following paragraph):

15. All (VILLAGE, CITY) owned utilities, on STATE right of way within the limits of this improvement, which are to be relocated/adjusted under the terms of this Agreement, will be relocated/adjusted in accordance with the applicable portions of the "Accommodation of Utilities of Right of Way of the Illinois State Highway System." (92 Ill. Adm. Code 530).

16. The (VILLAGE/CITY) agrees to obtain from the STATE an approved permit for the facility, and to abide by all conditions set forth therein.

17. Upon final field inspection of the improvement and so long as (Street Name) ____is used as a State Highway, the STATE agrees to maintain or cause to be maintained the median, the _____ through traffic lanes lying _____ on either side of the (median), (centerline) and the left-

turn and right-turn lanes, each lane being _____ feet (_____meters) and variable in width, and the curb and gutter or stabilized shoulders and ditches adjacent to those traffic lanes and turn lanes to be maintained by the STATE.

18. Upon final field inspection of the improvement, the (VILLAGE, CITY, COUNTY, TOWNSHIP) agrees to maintain or cause to be maintained those portions of the improvement which are not maintained by the STATE, including parking lanes and their adjacent curb and gutter, sidewalks, parkways, guardrails, crosswalk and stopline markings, (VILLAGE, CITY, COUNTY, TOWNSHIP) owned utilities including appurtenances thereto, highway lighting including furnishing the electrical energy therefore and shall maintain the storm sewers and appurtenances by:

NOTE: INSERT A OR B AS APPROPRIATE.

(A) Applicable when storm sewer system constructed for State highway drainage only:

performing those functions necessary to keep the sewer in a serviceable condition including cleaning sewer lines, inlets, manholes, and catch basins along with the repair or replacement of inlet, manhole and catch basins' frames, grates or lids. The maintenance, repair and/or reconstruction of storm sewers constructed as part of this improvement beyond the aforedescribed responsibilities shall be that of the STATE.

(B) Applicable when storm sewer system constructed as a joint LA and State use facility:

performing those functions necessary to keep the sewer in a serviceable condition including cleaning sewer lines, inlets, manholes and catch basins along with the repair or replacement of inlet, manholes and catch basins' frames, grates or lids. The STATE shall share cost of the maintenance, except as aforedescribed, repair and/or reconstruction of the joint use sewer(s) to the same proportioning as the sewers initial construction costs.

The (VILLAGE, CITY, COUNTY, TOWNSHIP) further agrees to continue its existing maintenance responsibilities on all side road approaches under its jurisdiction, including all left and right turn lanes on said side road approaches, up to the through edge of pavement of US/Illinois/CH Route _____. Drainage facilities, if any, at the aforementioned side roads located within the STATE right-of-way shall be the joint maintenance responsibility of the

STATE and the (VILLAGE, CITY, COUNTY, TOWNSHIP) unless there is an agreement specifying different responsibilities.

FOR TRAFFIC SIGNALS – USE 19A, 19B, 19C WHERE APPROPRIATE.

(Verbiage For Installation And/Or Modernization Projects Where No Master Agreement Exists.)

19a. Upon acceptance by the STATE of the traffic signal work included herein, the financial responsibility for the maintenance and electrical energy charges for the operation of the traffic signal(s) shall be proportioned as follows:

Intersection	Maintenance	Electrical Energy
_____Route _____		
@ _____ Street		
STATE Share	( )%	( )%
CITY or VILLAGE Share	( )%	( )%

(Share percentages are determined from Appendix C.)

It is mutually agreed that the actual traffic signal maintenance will be performed by the (STATE, CITY or VILLAGE), either with its own forces or through an ongoing contractual agreement. It is further mutually agreed that the traffic signals shall be maintained to the standard described in the 2000 Edition of the Illinois Manual of Uniform Traffic Control Devices, Part 4, Section 4D.02 a copy of which is attached hereto as "Exhibit_____" and made a part hereof.

(The following paragraph is needed only when a City or Village maintains the signals.)

It is also understood that if, in the judgment of the STATE, the (CITY or VILLAGE) has not provided adequate maintenance for those traffic signals which it has been assigned to maintain, the STATE will, upon giving 30 days written notice, arrange for the appropriate maintenance efforts and bill the (VILLAGE or CITY) for its share of the costs.

The (STATE, VILLAGE or CITY) agrees to bill the (STATE, VILLAGE, or CITY) for its proportionate share of the traffic signal maintenance costs on a three-month basis. The amount billed shall be the actual costs incurred less any third party damage claims received during the billing period for repair of traffic signals that are the responsibility of the billed party. Any proposed expenditure in excess of $5,000 for repair of damage to any single traffic signal installation must be approved by the billed party before the expenditure is made. The STATE reserves the right to examine the records of the (VILLAGE or CITY) to determine that costs billed are fully documented.

The STATE agrees to make arrangements with the local power company to furnish the electrical energy for the operation of the traffic signals. The (STATE, CITY or VILLAGE) agrees to pay their proportionate share of this cost as billed by the local power company.

The STATE retains the right to control the sequence and timing of the traffic signals.
Payment by the STATE of any or all of its' share of maintenance and energy costs is contingent upon the STATE receiving adequate funds in its annual appropriation.

The parties hereto agree that the traffic signal maintenance and energy provisions of this Agreement shall remain in effect for a period of twenty (20) years from the date of its execution or so long as the traffic signals covered by the terms of this Agreement or any amendment hereto remain in place either in their current or some modified configuration, whichever, is the shorter period of time. Such an effective term shall apply unless otherwise agreed in writing by the parties hereto.

(Verbiage for Modernization Project Where Master Agreement Exists.)

19b. Upon acceptance by the STATE of the traffic signal work included herein the responsibility for maintenance and energy shall continue to be as outlined in the Master Agreement executed by the STATE and the (CITY/VILLAGE) on _____ 20 _____.

(Verbiage for Installation Project Where Master Agreement Exists.)

19c. Upon acceptance by the STATE of the new traffic signal installation(s), the financial responsibility for maintenance and electrical energy for the operation of the traffic signals shall be proportioned as follows:

Intersection	Maintenance	Electrical Energy
_____Route _____		
@ _____Street		
STATE Share	( )%	( )%
CITY or VILLAGE Share	( )%	( )%

(Share percentages are determined from Appendix C.)

It is mutually agreed that the actual traffic signal maintenance will be performed by the (STATE, CITY or VILLAGE), either with its own forces or through an ongoing contractual agreement.

It is further agreed that the traffic signal shall be maintained to at least the Levels of Maintenance shown in the Illinois Manual of Uniform Traffic Control Devices, Part 4, Section 4D.02, a copy of which is attached hereto as "Exhibit_____" and made a part hereof.

Upon acceptance by the STATE of the new traffic signal installation(s) included herein, the responsibility for maintenance and energy outlined above shall become a part of the Master Agreement executed by the State and the (CITY/VILLAGE) on _____ 20 _____.

(The following paragraph should be included when an agreement involves both new signal installations, as above, and the modernization or modifications of existing signals.)

20. Upon acceptance by the STATE of the work proposed herein on existing signals, the responsibility for maintenance and energy shall continue to be as outlined in the aforementioned Master Agreement.

21. The STATE agrees to make arrangements with the local power company to furnish the electrical energy for the operation of the traffic signals. The (STATE, CITY or VILLAGE) agrees to pay their proportionate share of this cost as billed by the local power company.

(If the Local Agency Is To Provide Engineering, Materials, And/Or Let The Contract On A Federal-aid Project, Then The Following Covenant Must Be Included.)

22. The (VILLAGE, CITY, COUNTY, TOWNSHIP), subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The (VILLAGE, CITY, COUNTY, TOWNSHIP) shall carry out applicable requirements of 49 CFR part 26 in the award and administration of STATE-assisted contracts. Failure by the (VILLAGE, CITY, COUNTY, TOWNSHIP) to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the STATE deems appropriate.

23. The (VILLAGE, CITY, COUNTY, TOWNSHIP) and the State have agreed to a jurisdictional transfer for a portion of Highway described in this Agreement. A copy of the jurisdictional transfer document is attached hereto as "Exhibit _____", and made a part hereof.

24. The (VILLAGE, CITY, COUNTY, TOWNSHIP) agrees to provide written approval of that portion of the plans and specifications relative to the (VILLAGE, CITY, COUNTY, TOWNSHIP) financial and maintenance obligations described herein, prior to the STATE's advertising for the aforedescribed proposed improvement.

25. Obligations of the STATE and (VILLAGE, CITY, COUNTY, TOWNSHIP) will cease immediately without penalty or further payment being required if, in any fiscal year, the Illinois

General Assembly or Federal funding source fails to appropriate or otherwise make available funds for this contract.

26. This AGREEMENT and the covenants contained herein shall be null and void in the event the contract covering the construction work contemplated herein is not awarded within the three years subsequent to execution of the agreement.

This agreement shall be binding upon and to the benefit of the parties hereto, their successors and assigns.

NOTE: THIS SIGNATURE IS TO BE UTILIZED IF THE LOCAL AGENCY REIMBURSES THE STATE MORE THAN $50,000 OR THE STATE REIMBURSES THE LOCAL AGENCY IS LESS THAN $250,000 OR JURISDICTIONAL TRANSFER.

_____ of _____

Attest:

By: _____

_____

Clerk

TITLE: _____

Date: _____

(SEAL)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

By: _____

Director of Highways

Date: _____

NOTE: THIS SIGNATURE FORMAT IS TO BE UTILIZED IF THE STATE REIMBURSES THE LOCAL AGENCY IS MORE THAN $250,000 AND JURISDICTIONAL TRANSFER.

_____ of _____

Attest:

By: _____

_____

Clerk

TITLE: _____

(SEAL)

Date: _____

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

By: _____
Secretary

By: _____
Director - Finance & Administration

Date: _____

Date: _____

By: _____
Director – Division of Highways

By: _____
Chief Counsel

Date: _____

Date: _____

Chapter Six

UTILITY COORDINATION

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

Chapter Six
UTILITY COORDINATION

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CHAPTER SIX

UTILITY COORDINATION

A utility adjustment is performed by a utility company (i.e., Utility), under a binding Agreement between the Utility and the State or under the terms of a utility permit, to relocate or remove a utility facility that cannot otherwise be avoided during highway construction. The procedures for processing these adjustments for IDOT's Federally funded projects are based primarily on the requirements of the Federal Highway Administration. For uniformity, IDOT also applies these requirements to its non-Federally funded projects. Chapter 6 documents the policies and procedures that should be employed when processing utility adjustments for the Department's highway improvement projects.

6-1 GENERAL GUIDELINES

6-1.01 Definitions

The following definitions apply to the accommodation of utilities on highway projects:

1. Utility. A privately, publicly, or cooperatively owned line, facility, or system for producing, transmitting, or distributing communications, cable television, power, electricity, light, heat, gas, oil, crude products, water, steam, waste, storm water not connected with highway drainage, or any other similar commodity, including any fire or police signal system or street lighting system, which directly or indirectly serves the public. The term Utility shall also mean the utility company inclusive of any wholly owned or controlled subsidiary. The term utility includes those facilities used solely by the Utility which are a part of its operating plant.

2. Utility Adjustment. A utility adjustment includes all activities necessary to relocate or remove an existing utility facility that interferes with a highway improvement project.

3. Utility Agreement. A utility Agreement is a legally binding document between the Utility and the State that defines the scope, reimbursement, and schedule parameters of the work to be performed by the Utility to complete the utility adjustment.

6-1.02 Applicable Publications

The policies, procedures, and guidelines that govern utility accommodation and adjustments are documented primarily in Item #'s 1, 2, and 3 in the following list of publications. Other references in the following list provide additional information on utility accommodation:

1. *Accommodation of Utilities on Right-of-Way of the Illinois State Highway System*, Part 530 of Title 92, Illinois Administrative Code.

2. *A Guide for Accommodating Utilities within Highway Right-of-way*, American Association of State Highway and Transportation Officials.

3. *Federal-Aid Policy Guide*, Title 23 Code of Federal Regulations, 23 CFR 645 A and B, Federal Highway Administration.

4. *Illinois Underground Utility Facilities Damage Prevention Act*, 220 ILCS 50/1 - 50/14.

5. *Title 49 Code of Federal Regulations*, Parts 21 and 23.

6. *Highway/Utility Guide*, Federal Highway Administration.

7. *Standard Specifications for Road and Bridge Construction*, Illinois Department of Transportation.

8. *A Policy on the Accommodation of Utilities within Freeway Right-of-Way*, American Association of State Highway and Transportation Officials.

9. *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*, 49 CFR Parts 191 and 192, Office of Pipeline Safety Operations, United States Department of Transportation, Federal Highway Administration.

10. *American National Standards, National Bridge Inspection Standards*, 23 CFR 25, Office of Federal Register National Archives and Record Administration, Federal Highway Administration.

11. *National Electrical Safety Code*, ANSI C2, Institute of Electrical and Electronics Engineers, American National Standards Institute.

12. *American National Standards, Gas Transmission and Distribution Piping Systems*, ANSI/ASME B31.8, American Society of Mechanical Engineers.

13. *American National Standards, Liquid Petroleum Transportation Piping Systems*, ANSI/ASME B31.4, American Society of Mechanical Engineers.

14. *Standard Specifications for Water and Sewer Main Construction in Illinois*, Associated General Contractors of Illinois.

15. *Valuation of Landscape Trees, Shrubs and Other Plants*, International Society of Arboriculture.

6-1.03 Reimbursement of Utility Adjustments

6-1.03(a) General Policy for Reimbursable Utility Adjustments

When the State is obligated to reimburse a Utility for the removal or alteration of its facility, all parties should understand that the adjustment will be undertaken in the most economical manner consistent with good engineering practice and in compliance with applicable codes and permit regulations. The State only will reimburse the Utility for comparable facilities. If the Utility elects to improve its facility during the adjustment (i.e., a utility betterment), the State only will reimburse the company for the cost of a comparable facility. Non-reimbursable adjustments of utilities located on public right-of-way should be conducted in accordance with the guidelines documented in *Accommodation of Utilities on Right-of-Way of the Illinois State Highway System*. Also, in accordance with the procedures and guidelines contained in the same publication, a utility permit shall be obtained by the Utility for all utilities to be located on State right-of-way.

6-1.03(b) Non-Freeway Facilities

Where utility adjustments are required for the construction of a non-freeway highway improvement project, the expense of these adjustments is generally borne as follows:

1. Public Right-of-Way. If a utility facility is located on publicly owned right-of-way, whether by permit or otherwise, the adjustment is at the expense of the Utility.

2. Private Right-of-Way or Easement Rights. If a Utility presents legal evidence that its facility is located on privately owned right-of-way or easement rights, the cost of the adjustment is eligible for reimbursement by the State.

3. Municipally Owned Utilities. When a Joint Agreement with a Municipality is required, the cost of adjusting a municipally owned facility is determined in accordance with the policies and procedures referenced in this section and in Section 5-5.

4. Prior Rights. If a utility was located on public right-of-way prior to the marking of a State-maintained route or if any utility is located on or adjacent to an easement previously subordinated to the State, the adjustments are eligible for reimbursement by the State.

6-1.03(c) Freeway and Expressway Facilities

In accordance with the *Illinois Compiled Statutes* (i.e., 605 ILCS 5/3-107, as amended), the State may participate in the cost to reimburse the Utility for adjusting a facility on public right-of-way when such adjustment is necessitated by the construction or reconstruction of the freeway facility. The amount of reimbursement will be for a comparable facility; facility improvements (betterments) are not reimbursable. If the adjustment is in conjunction with highway

reconstruction and the facility was adjusted during the highway's initial construction, the State will reimburse the Utility for the adjustment excluding any betterments or subsequent installations. Additional utility installations made after initial construction of an Interstate or other freeway facility are not eligible for reimbursement.

6-1.04 Programming Utility Adjustments

The district shall initiate, plan, and coordinate the programming and preliminary engineering activities of utility adjustments as documented in the *Federal-Aid Policy Guide* and Section 65-1. Consider the following guidelines when programming utility adjustments:

1. Programming. The adjustments may be programmed as:

   - a separate project,
   - a part of the right-of-way acquisition, or
   - an item that is included in the construction phase.

2. Required Programming Information. Include the following programming information:

   - list of all utility adjustments,
   - a general description of the necessary adjustment activities, and
   - the best available estimate for the total costs involved.

6-2 PROCEDURES

6-2.01 General

Locating and avoiding existing utility installations during the planning phase of any highway improvement is the first step for highways and utilities to co-exist in the same environment. If it is not practical to avoid an existing utility installation during construction, it will be necessary to adjust the utility. However, a considerable amount of time and money may be saved by modifying the design to avoid utility adjustments.

For Utility/State Agreements, City of Chicago Force Accounts, or Municipality/State Agreements, the cost estimates, design plan sheets, and Agreements should be reviewed, approved, and processed to meet scheduling of highway construction activities. The district must initiate, plan, and coordinate utility adjustment work so highway construction activities can proceed without unnecessary delay or expense. Completing the planning and negotiations for utility adjustments is as essential for clearing right-of-way as is acquiring property.

6-2.02 Utility Agreement/Adjustment Process (Utility/State Agreements)

Figures 6-2A and 6-2B illustrate, respectively, the process flowchart and timeline for utility adjustments on a typical highway improvement project.

6-2.03 Process for City of Chicago Force Account

If the State is obligated to reimburse the City of Chicago for adjusting utility facilities that interfere with highway construction, the following guidelines apply:

1. Plan and Estimate Review. The district reviews and approves the plan and estimate and forwards two copies of each to the BDE for funding appropriation. The Administration Group of the Agreements Unit obtains funding information and approval in the same manner as it does for Utility/State Agreements (see Sections 6-2.02 and 6-5).

2. Authorization to Proceed. Upon receipt of funding approval, the Agreements Unit gives the district verbal authorization to proceed with the utility adjustment. The district will issue a Letter of Authorization to the City of Chicago and send a copy to the BDE.

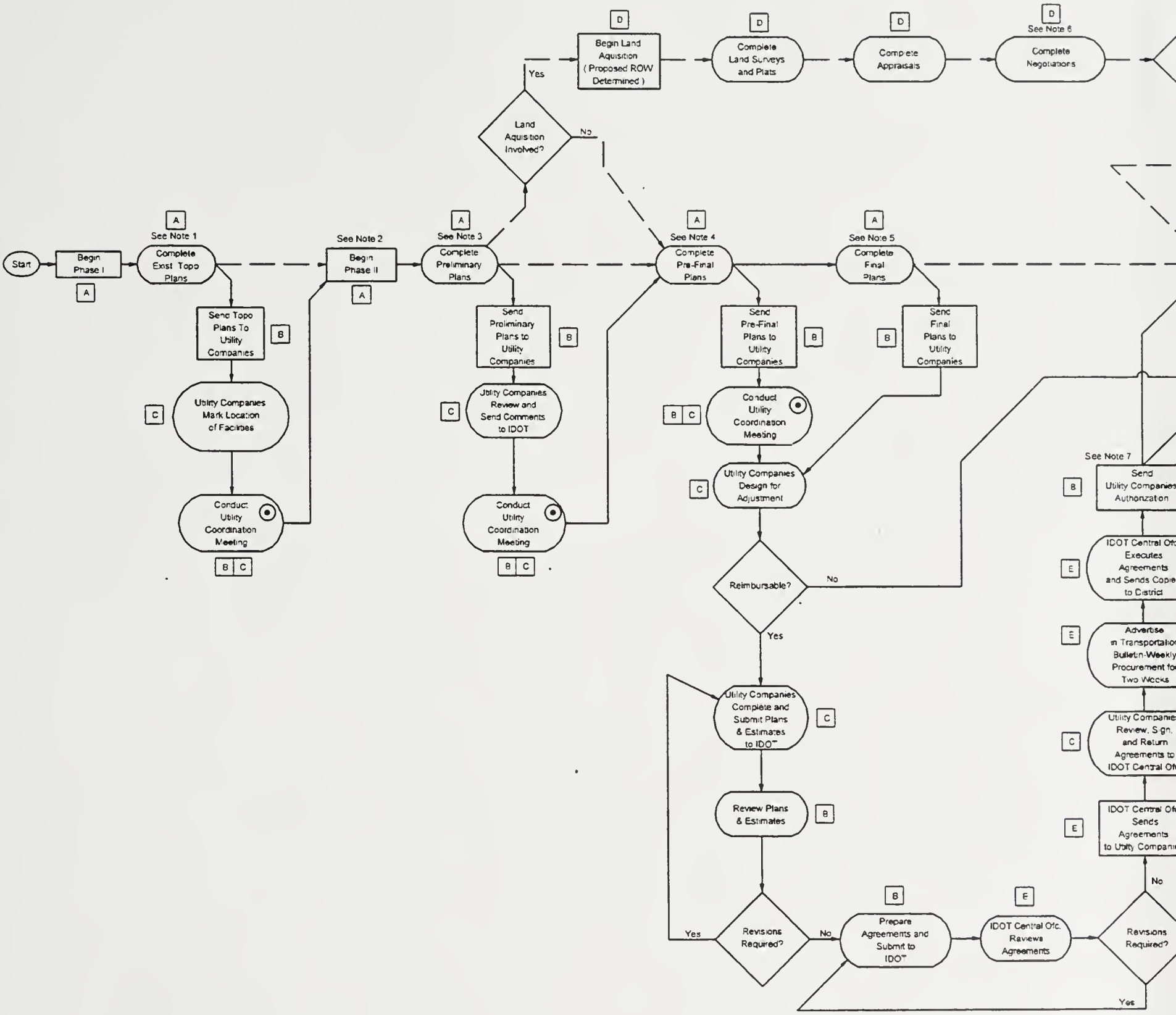
3. Contract Obligation Document (COD). The Administration Group of the Agreements Unit uses the Letter of Authorization to prepare and submit the COD.

6-2.04 Municipally Owned Utilities

If it is necessary to adjust a municipally owned utility, use one of the following two processing methods:

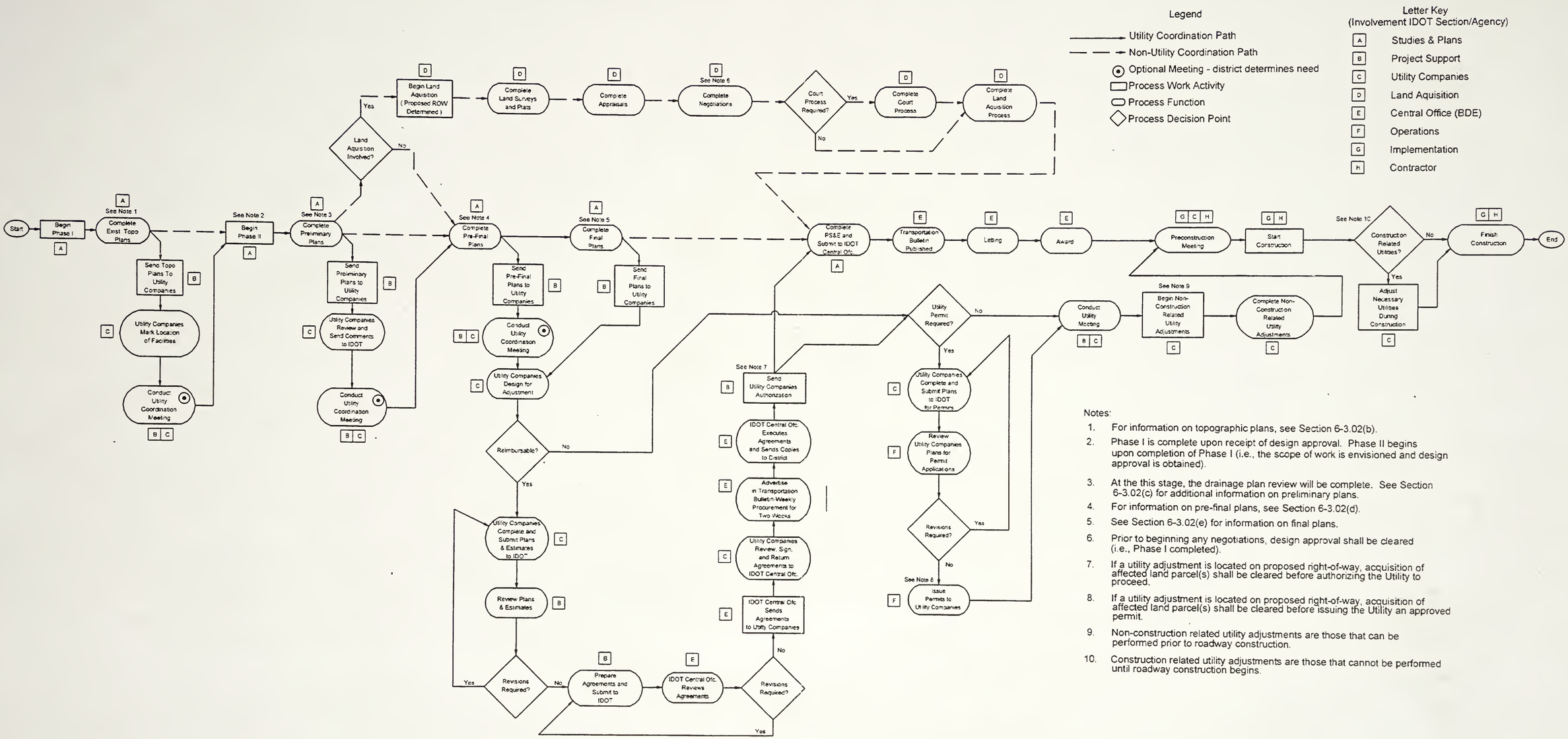
1. Joint Agreement Required. If a Joint Agreement is required between the State and Local Agency because of local participation in the project, the costs of any municipally owned utility adjustments may be included in the Joint Agreement. Follow the processing procedures for Joint Agreements outlined in Section 5-1.03.

2. Joint Agreement Not Required. If a Joint Agreement is not required or if the municipally owned utility operates as a separate entity, process the Agreement in the same manner as for Utility/State Agreements (see Section 6-2.02).



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(Typical Highwa

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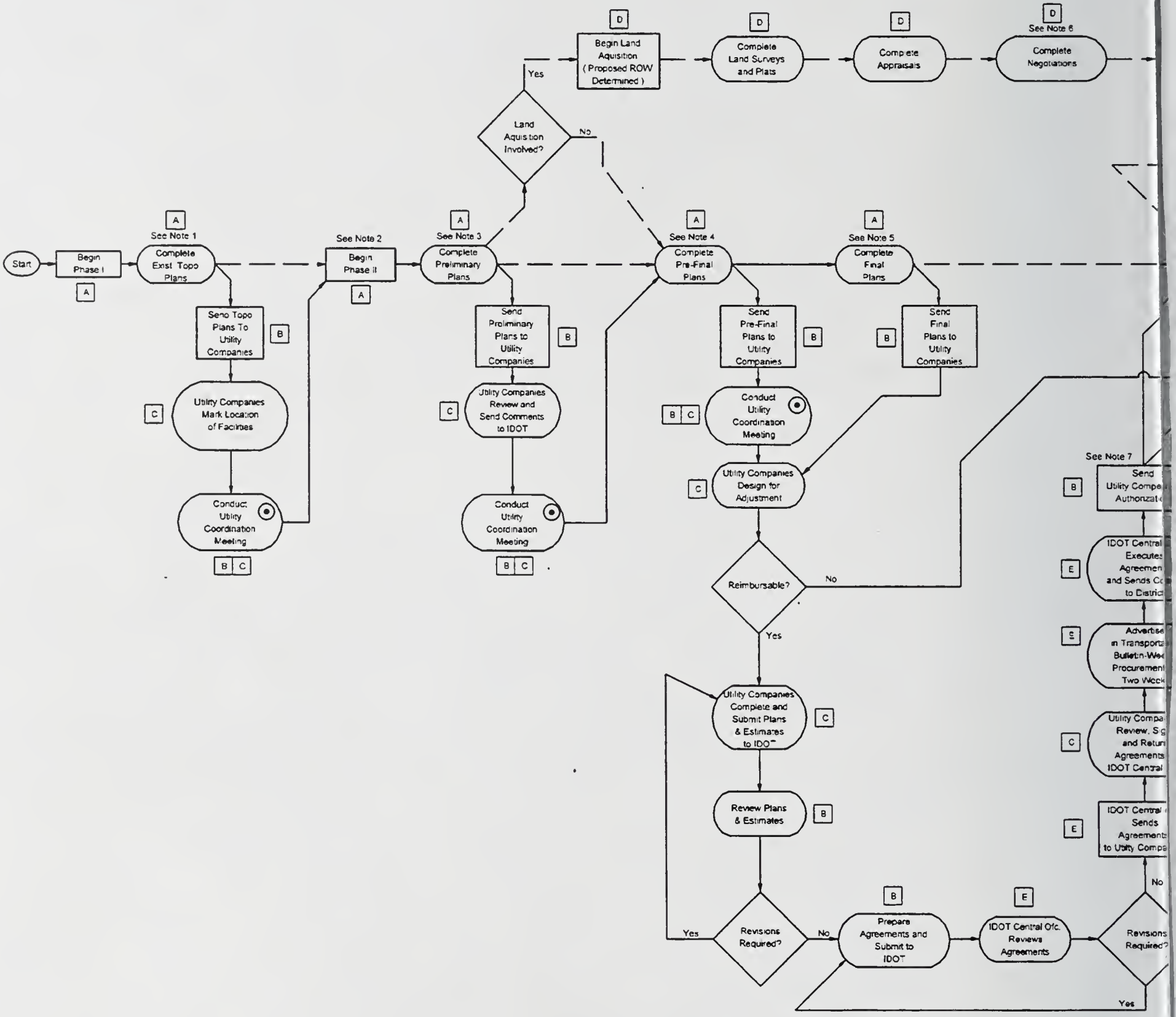
Notes:

1. For information on topographic plans, see Section 6-3.02(b).
2. Phase I is complete upon receipt of design approval. Phase II begins upon completion of Phase I (i.e., the scope of work is envisioned and design approval is obtained).
3. At the this stage, the drainage plan review will be complete. See Section 6-3.02(c) for additional information on preliminary plans.
4. For information on pre-final plans, see Section 6-3.02(d).
5. See Section 6-3.02(e) for information on final plans.
6. Prior to beginning any negotiations, design approval shall be cleared (i.e., Phase I completed).
7. If a utility adjustment is located on proposed right-of-way, acquisition of affected land parcel(s) shall be cleared before authorizing the Utility to proceed.
8. If a utility adjustment is located on proposed right-of-way, acquisition of affected land parcel(s) shall be cleared before issuing the Utility an approved permit.
9. Non-construction related utility adjustments are those that can be performed prior to roadway construction.
10. Construction related utility adjustments are those that cannot be performed until roadway construction begins.

UTILITY ADJUSTMENT PROCESS FLOWCHART
(Typical Highway Improvement Project)

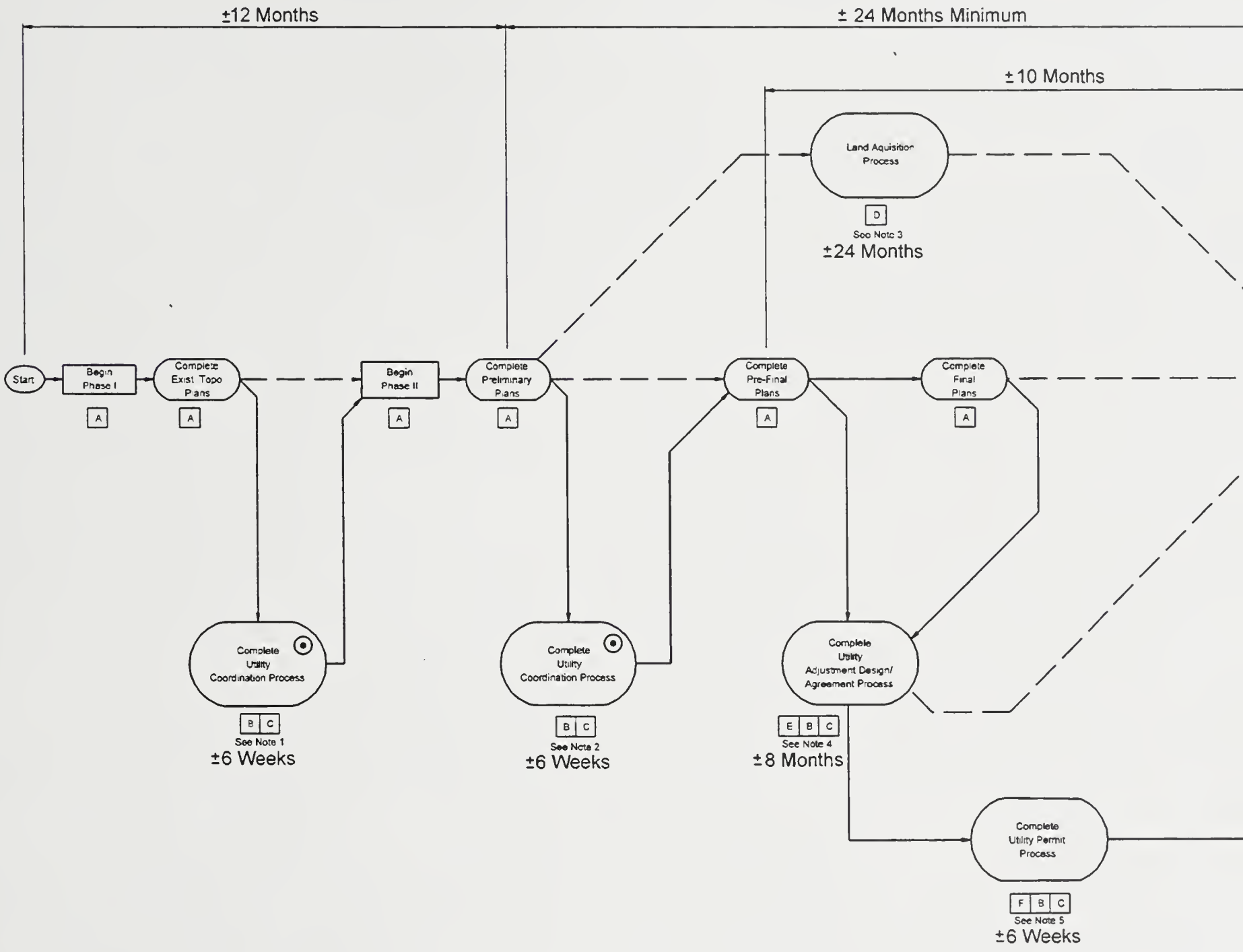
Figure 6-2A

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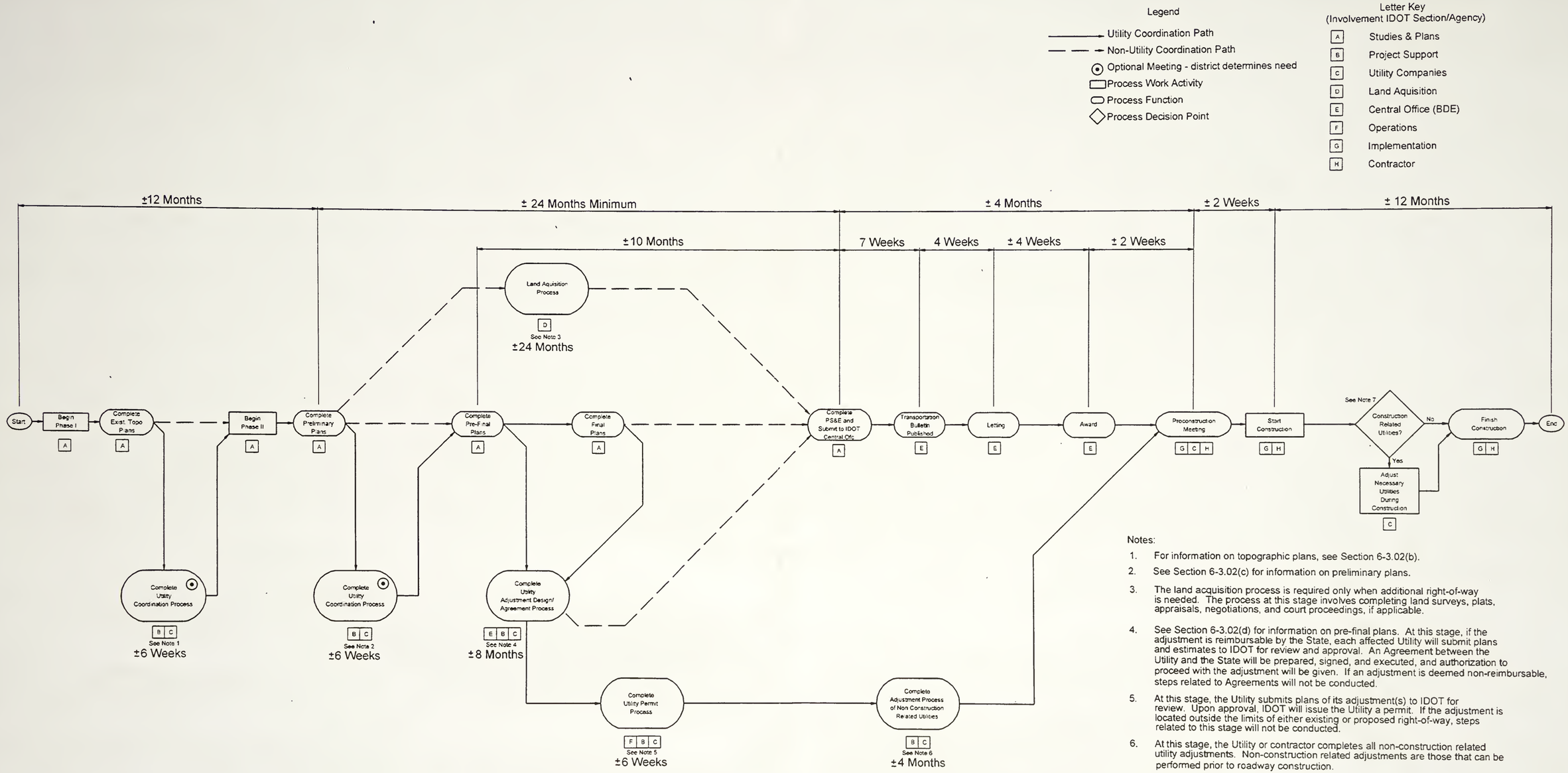
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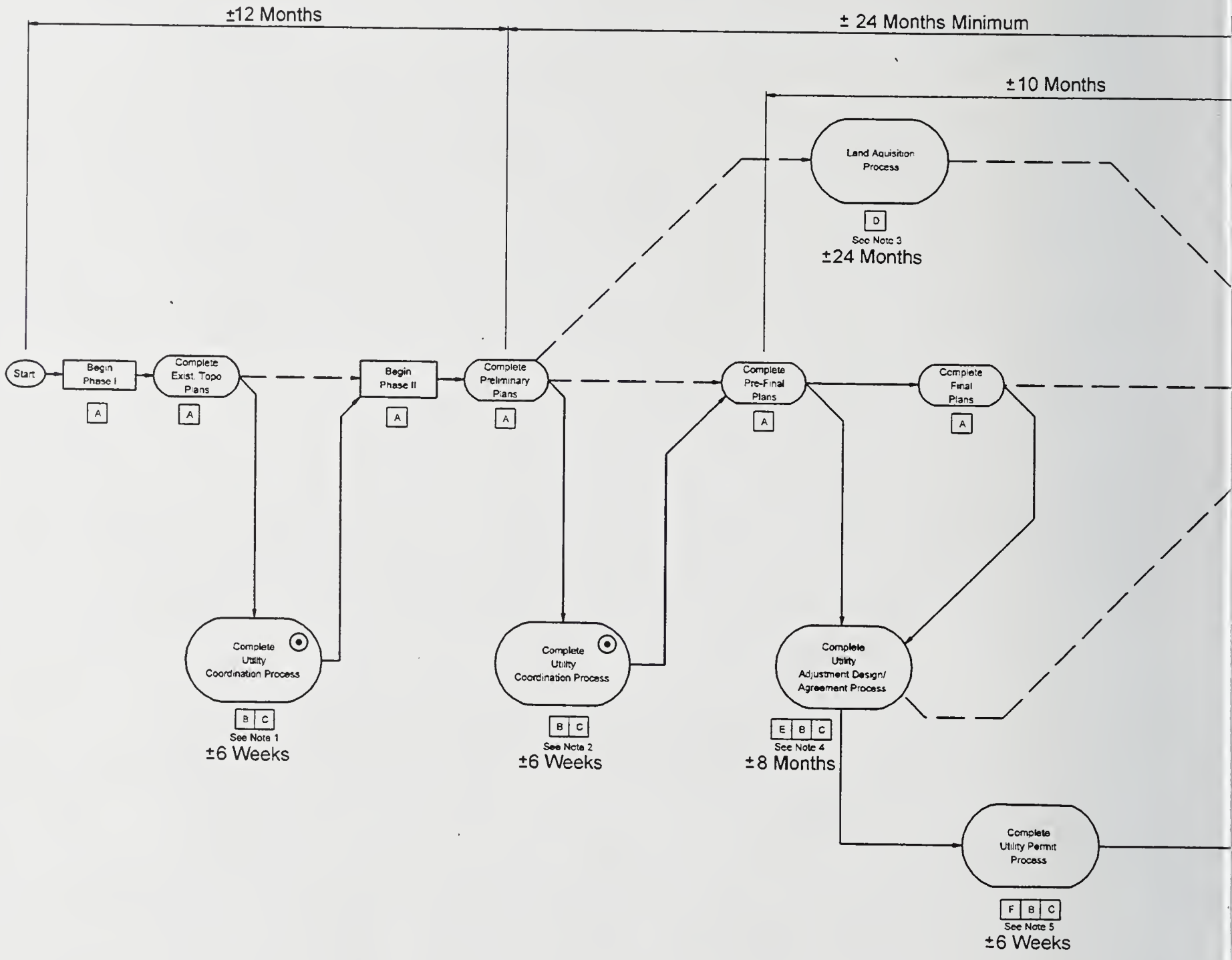


Notes:

1. For information on topographic plans, see Section 6-3.02(b).
2. See Section 6-3.02(c) for information on preliminary plans.
3. The land acquisition process is required only when additional right-of-way is needed. The process at this stage involves completing land surveys, plats, appraisals, negotiations, and court proceedings, if applicable.
4. See Section 6-3.02(d) for information on pre-final plans. At this stage, if the adjustment is reimbursable by the State, each affected Utility will submit plans and estimates to IDOT for review and approval. An Agreement between the Utility and the State will be prepared, signed, and executed, and authorization to proceed with the adjustment will be given. If an adjustment is deemed non-reimbursable, steps related to Agreements will not be conducted.
5. At this stage, the Utility submits plans of its adjustment(s) to IDOT for review. Upon approval, IDOT will issue the Utility a permit. If the adjustment is located outside the limits of either existing or proposed right-of-way, steps related to this stage will not be conducted.
6. At this stage, the Utility or contractor completes all non-construction related utility adjustments. Non-construction related adjustments are those that can be performed prior to roadway construction.
7. Construction related utility adjustments are those that cannot be performed until roadway construction begins.

UTILITY ADJUSTMENT PROCESS FLOWCHART
(Typical Highway Improvement Project)

Figure 6-2B



UTILITY ADJUSTMEN
(Typical Highway

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6-3 PREPARATION OF UTILITY PLANS

6-3.01 General

Coordination with Utilities begins as early as practical during project development (e.g., planning, preliminary engineering). The Department typically sends plans at various stages of completion to each affected Utility for review and comment. It is the responsibility of each Utility to verify and/or provide the following information on its utility facilities:

- type,
- size,
- vertical and horizontal location, and
- information on retired facilities.

If a utility installation will be located or relocated on or across public right-of-way that is under the Department's jurisdiction, the Utility shall submit an application for a utility permit to the district for review and approval in accordance with the policies and procedures in the publication *Accommodation of Utilities on Right-of-Way of the Illinois State Highway System*.

For any contract that requires work below the existing pavement structure or ground surface, including those where posts will be driven into existing ground, the designer will identify all known utility facilities within the limits of the right-of-way by appropriate symbol on the final construction plans. Show vertical and horizontal dimensions of both existing and proposed utility facilities to the precision provided by the Utility regardless of whether the facility will be adjusted or remain in place.

For each utility adjustment that will be reimbursed by the State, the district reviews the adjustment type, method, plans, and cost estimate and provides recommendations for final approval by the BDE.

6-3.02 Plan Preparation for Department Projects

6-3.02(a) General

See Chapter 63 for criteria on plan preparation for Department projects (e.g., drafting guidelines, individual plan sheet content and format, construction codes). Plans typically are sent at various stages of completion to each affected Utility to assist in determining whether or not an adjustment is needed. IDOT may prepare separate plan sheets with utility information and insert these sheets into the final contract plan assembly at the proper location (see Section 63-3.04). The district is responsible for clearly showing the locations of all known utility facilities on the project plans and how they will be affected. Each Utility is responsible for identifying the location of their respective facilities (e.g., horizontal and vertical dimensions) on the plan sheets and documenting the work for any needed adjustments.

6-3.02(b) Topographic Plans

The district shall submit the following information to the Utilities so they can identify their respective facilities within the improvement area:

- a cover sheet that includes a location map showing the limits of the improvement, and
- a set of plan sheets that contain complete topography and existing right-of-way limits.

Prior to surveying a project, the Project Support Section will contact JULIE and schedule a Design Phase Locate Meeting with the Utilities to explain the limits and scope of the improvement and the approximate date and location that IDOT surveyors will begin work. So that IDOT surveyors can record the necessary utility information, the Utilities should be given sufficient time to locate and mark their facilities in the field prior to the IDOT survey. Incorporate the utility information gathered in the field on the topographic plans and submit the plans to each affected Utility for review and verification. If a Utility does not mark its facilities in the field prior to the IDOT survey, the Utility will need to manually plot its facilities on the topographic plans based on office records and previously filed location data and return the markups to the Department.

6-3.02(c) Preliminary Plans

Preliminary plans are considered to be 60% to 70% complete and ready for a district plan and field review. The district prepares preliminary plans in sufficient detail to conduct the preliminary plan and field review (see Section 63-1.02(b)) which will include the following:

1. Cover Sheet. Provide a cover sheet that includes a location map showing the limits of the improvement.

2. Plan Sheets. Include the following information on the plan sheets:

   - existing utility locations,
   - all proposed improvements,
   - existing and proposed right-of-way and easement lines, and
   - known environmental issues.

3. Cross Section Sheets. Include the following information on the cross section sheets:

   - proposed improvements,
   - limits of earthwork, and
   - drainage improvements.

During the development of the preliminary plans, it may be necessary for the Utilities to survey or probe the site to locate their facilities. Obtain and include this information on the preliminary plans.

The Project Support Section is responsible for determining the type and nature of all utility facilities located within the limits of both existing and proposed right-of-way and for identifying each facility owner and its address. Through field surveys, verify all utility facilities within the limits of the improvement and determine potential conflicts. Notify the Project Support Section of any additional utility facilities located but not previously identified. Use the following guidelines when preparing the preliminary plans:

1. Utility Facility Plan Symbols. Identify the utility facilities using the appropriate plan symbols as documented in the *Highway Standards* and the *CADD Roadway Drafting Reference Guide*.

2. Dimensional Precision in Locating Facilities. Show the vertical and horizontal locations of the utility facilities to the dimensional precision provided by the Utility.

3. Use of Dimensional Ranges. If the location of the utility facility provided by the Utility is expressed as a dimensional range (e.g., 6.0 ft to 6.5 ft (2.0 m to 2.5 m)), show the same range on the preliminary plans.

Submit the preliminary plans to the Utilities for review and verification and inform them of the schedule for placing the highway improvement under contract. Periodically contact all affected Utilities to maintain a mutual understanding of the project schedule and to facilitate a timely completion of the needed adjustments. For complex or utility-sensitive projects, hold coordination meetings with all affected Utilities to discuss and/or clarify the following:

- relevant details of the overall project scope,
- potential conflict areas,
- design alternatives,
- coordination of adjustments,
- timing and scheduling of work,
- deadlines for permit applications,
- deadlines for completing adjustments; and
- budgeting for future adjustments.

6-3.02(d) Pre-Final Plans

Pre-final plans are considered to be 90% to 95% complete, including all necessary details, pay items, quantities, and special provisions, and ready for district review and signatures. Send pre-final plans to the affected Utilities so they can identify conflicts, determine the extent of needed

adjustments, complete adjustment designs, order materials, prepare contracts, and schedule work crews.

6-3.02(e) Final Plans

Final plans are 100% complete and ready for PS&E submittal and letting by the Central Office. Upon completing the final plans, the district shall immediately forward the plan set to each Utility (this applies to both municipally owned and privately owned utilities). Include the following information in the transmittal letter:

1. Date of Transmittal. The date of transmittal is the date the transmittal letter is prepared.

2. Letting Date. The letting date is the anticipated date of letting by the Central Office.

3. Response Date. Request the Utility to respond with information by a specific date. The response date will be, at a minimum, 30 days from the Utility's receipt of the final plans.

4. Date(s) of Previous Plan Submittals. Include the date(s) that previous plans were forwarded, if applicable.

5. Verification of Accuracy. Include a short statement requesting the Utility to review the plans and verify the accuracy of its facility locations as shown on the plans.

6. Notification of Plan Changes. Inform the Utility of any revisions to its utility adjustment(s) that were made after the pre-final plan stage.

7. Other Information. Include other relevant information as appropriate.

Send the transmittal letter and final plan set to each Utility via certified mail and request that a delivery receipt be returned. Other methods of transmittal are acceptable provided that a delivery receipt indicating the package was received by the Utility is returned.

6-3.02(f) Transmittal Letters

Examples of transmittal letters for topographic plans, preliminary plans, pre-final plans, and final plans are illustrated, respectively, in Figures 6-3A, 6-3B, 6-3C, and 6-3D.

6-3.02(g) Utility Plans

The Utility is responsible for preparing plans for adjustments to its facilities and for ensuring that the plans conform to the requirements of the following documents:

Illinois Department of Transportation

CERTIFIED MAIL

_____
_____
_____
_____

UTILITY ADJUSTMENT
Route _____
Section _____
_____ County

Dear _____:

We are transmitting two sets of existing topography plans for the subject improvement which has been included in our multi-year program.

The contemplated scope of work consists of _____
_____
_____.

Please incorporate and/or identify your existing utility facilities on the enclosed plans, provide dimensions for any underground facilities, and return one set of the plans to this office by _____. Information you provide will be incorporated in the project plans as they are developed.

Should you have any questions regarding this improvement, contact _____ _____ at _____.

Sincerely,

District Engineer

Program Development Engineer

bcc: Project Engineer

SAMPLE TRANSMITTAL LETTER TO UTILITIES
(Topographic Plans)

Figure 6-3A

CERTIFIED MAIL

_____
_____
_____
_____

UTILITY ADJUSTMENT
Route _____
Section _____
_____ County
Job No. _____
Contract No. _____

Dear _____:
Enclosed are preliminary plans for the above noted improvement, which is tentatively scheduled for the _____construction letting.

The improvement will consist of _____
_____
_____.

In order for us to complete our construction plans, it will be necessary for us to know the locations of all utilities on or along our right of way as well as possible utility conflicts.

We are enclosing two sets of plans, one of which you may keep for your files. On the second set of plans, please confirm the location of your facilities (if shown) and draw on the prints any facilities not shown. Accurate horizontal and vertical locations as well as sizes of facilities are needed. Also, please outline the areas of possible conflicts with your facilities.

Please return the marked set to this office by _____.
We will include your utility locations on our detailed plans and provide you with such plans when they are available.

Since we are acquiring additional right of way, a portion of your adjustments may be reimbursable. If adjustments are required to that portion of your facilities located on easement and/or private property, then plans, estimates, and an agreement to cover reimbursement will be necessary. (SEE NOTE)

In the above regard, you should advise us as soon as possible whether any portion of your adjustments are reimbursable and the approximate cost of such reimbursable adjustments. This letter is your authorization to proceed with the preliminary engineering for the adjustment of your facilities that are reimbursable. (SEE NOTE)

SAMPLE TRANSMITTAL LETTER TO UTILITIES
(Preliminary Plans)

Figure 6-3B

Page 2

If additional information is needed in determining your involvement, please make any early request to _____ at _____ _____. You should return the marked set of plans to this office by _____ to ensure the information will appear on the construction plans.

Sincerely,

District Engineer

Program Development Engineer

bcc: Project Engineer

NOTE: PARAGRAPHS IN BOLD AND ITALICS ARE OPTIONAL

SAMPLE TRANSMITTAL LETTER TO UTILITIES
(Preliminary Plans)

Figure 6-3B
(Continued)

CERTIFIED MAIL

_____
_____
_____
_____

UTILITY ADJUSTMENT
Route _____
Section _____
_____ County
Job No. _____
Contract No. _____

Dear _____:

Enclosed is one set of prefinal plans for subject improvement which is tentatively scheduled for the _____construction letting. These plans should permit you to determine the extent of adjustments to your facilities. Preliminary plans for this improvement were previously provided your office on _____.

Please review these plans as to the location of your utility facilities. Should you find any additions and/or corrections, you must notify the Project Support Section by _____. Failure to comply with this notification could result in damage to your facilities and delays during the construction of this project.

We request you proceed with the preparation of plans for the necessary adjustment at the earliest possible time. If the cost of the adjustments are reimbursable, please submit four copies of the plans and estimates to this office along with documentation of easement rights.

Any adjustment work necessary in eliminating a conflict shall be done in accordance with the manual "Accommodation of Utilities on Rights of Way of the Illinois State Highway System" and an approved utility permit. Application for a permit shall be made through the Permit Section Chief. No adjustments may be performed until a permit has been issued by this office.

Should you have any questions regarding this improvement, contact _____.

Sincerely,

District Engineer

Engineer of Program Development

bcc: Project Engineer

SAMPLE TRANSMITTAL LETTER TO UTILITIES
(Pre-Final Plans)

Figure 6-3C

CERTIFIED MAIL

_____
_____
_____
_____

UTILITY ADJUSTMENT
Route _____
Section _____
_____ County
Job No. _____
Contract No. _____

Dear _____:

Enclosed is one set of final plans for subject improvement which is scheduled for the _____letting. Prefinal plans for this improvement were previously provided your office on ._____.

Please review these plans as to the location of your utility facilities. Should you find any additions and/or corrections, you must notify the Project Support Section by _____. Failure to comply with this notification could result in damage to your facilities and delays during the construction of this project.

You are hereby requested to proceed promptly with the adjustment of your facilities required by this improvement and notify this office as to the status of this work. Any adjustment work necessary in eliminating a conflict shall be done in accordance with the manual "Accommodation of Utilities on Rights of Way of the Illinois State Highway System" and an approved utility permit. Application for a permit shall be made through the Permit Section Chief. No adjustments may be performed until a permit has been issued by this office.

Should you have any questions regarding this improvement, contact _____ at _____. Arrangements will be made for you to be invited to the preconstruction conference.

Sincerely,

District Engineer

Engineer of Program Development

bcc: Project Engineer

SAMPLE TRANSMITTAL LETTER TO UTILITIES
(Final Plans)

Figure 6-3D

- *Federal-Aid Policy Guide*,
- *A Policy on the Accommodation of Utilities Within Freeway Right-of-Way*, and
- *Accommodation of Utilities on Right-of-Way of the Illinois State Highway System.*

Clearly and accurately show the existing conditions, proposed utility adjustments, and any needed relocations relative to the final roadway construction. Include the following items on the utility plans:

- existing and proposed right-of-way lines;
- access control lines;
- existing utility facility;
- temporary work, if required;
- final utility facility;
- cross section and elevation drawings for all buried and overhead utilities;
- plan scale;
- roadway stationing; and
- notes for construction sequencing, as appropriate.

In addition to these requirements, consider the following additional guidelines when developing the utility plans:

1. Overhead Lines. Ensure that the vertical clearance of overhead power or communication lines crossing any highway meets or exceeds the vertical clearance criteria in the National Electric Safety Code (NESC).

2. Underground Facilities. For underground facilities permitted to cross fully access-controlled or conventional highways, meet or exceed the minimum cover requirements of the applicable ANSI Standard.

3. Plan Detail. Provide a legend that clearly defines all plan symbols. Locate the plan scale in a discernible location and clearly show the roadway stationing. If the sequence of construction is not readily apparent from the plans, provide detailed notes for clarification.

4. Clear Width of Sidewalks. When placing above ground utilities in or near sidewalks, do not encroach the clear width of the sidewalk. See Chapter 58 for information on sidewalk clear width and other ADA design criteria.

5. Other Guidelines. See the publications in Section 6-1.02 for additional provisions, guidelines, and requirements

If the utility adjustment is programmed and let by the State as a separate project, prepare a cover sheet in the same manner as for other highway projects. See Section 63-4.02 for information that should be included on the cover sheet. List each utility adjustment on the cover

sheet and indicate the utility company name, type of adjustment, and its location with respect to roadway stationing. When adjustments are made under a State contract in conjunction with a roadway project, submit the plans and estimates according to the procedures in Section 66-3.

6-4 605 ILCS 5/9 – 113 AND UTILITY COORDINATION

(This section will be prepared and distributed in the future. Please contact the Bureau of Design and Environment for interim information.)

6-5 ESTIMATES

6-5.01 General

The affected Utilities are responsible for preparing and submitting to the district cost estimates for each of their respective reimbursable adjustments. Each cost estimate will be prepared in accordance with the requirements of the *Federal-Aid Policy Guide*, Part 645.

6-5.02 Preparation of Estimates

Ensure that each cost estimate contains, at a minimum, the following details:

- labor type, hours, and hourly rate;
- equipment types and rates;
- material quantities and costs; and
- engineering costs.

Consider the following guidelines when requesting cost estimates for utility adjustments:

1. Multiple Locations of Adjustments. Request the Utility to submit a separate cost estimate for each reimbursable adjustment location within the limits of the project.

2. Multiple Sources of Funding. When a utility adjustment is necessary on a project financed with multiple funding sources, the district will indicate the limits for each participating source on the final utility plan sheets. The district will instruct the Utility on the division of the adjustment among the funding sources, and indicate the number of separate cost estimates required. For information on funding splits, see Chapter 65.

3. Utility Facility Improvements (Betterments). Improvements (betterments) to utility facilities are not reimbursable. If a Utility elects to improve, change, rearrange, or otherwise enhance its facilities beyond that which currently exists, obtain separate estimates to identify the cost difference between the preferred adjustment and the adjustment that is comparable to the existing facility.

4. Temporary Work. When temporary work (e.g., temporary pole, temporary line) is necessary to accomplish the final adjustment, separately estimate the costs attributable to the temporary portion. Document cost estimates for temporary work in the same detail as that required for permanent work.

5. Preliminary Engineering Estimates. Document preliminary engineering costs separately from construction costs.

6. Overheads and Additives. Include construction overheads and labor additives in the cost estimate as described in the *Federal-Aid Policy Guide*.

7. Credits. Credit for accrued depreciation and salvaged materials will be provided in the adjustment estimate.

6-5.03 Review of Estimates

The district will review each Utility's cost estimate for reasonableness and accuracy. Verify material costs through material suppliers or through a comparison to similar items on previous adjustments. Also verify material quantities. Compare engineering costs either to those previously approved or to those recommended by the Illinois Society of Professional Engineers. Document that all estimates have received the necessary level of technical evaluation.

6-6 AGREEMENT PROCESSING (Utility/State Agreements)

6-6.01 Review and Approval by District

The district has the primary responsibility for reviewing submittals prepared by Utilities. Thoroughly review each Agreement Package for the following:

- proper preparation and submission,
- discrepancies between the Utility's submittal and the project plans and schedule,
- reasonableness and accuracy of cost estimates,
- items that are not reimbursable by the State, and
- the identification and segregation of any proposed utility betterments.

If discrepancies are found, immediately return the plans and estimate, with appropriate comments, to the Utility. Resolve all discrepancies with the Utility prior to submitting the adjustment plans and estimate to the BDE.

6-6.02 Submittal of Agreement Package

For each reimbursable adjustment performed by a Utility, the district will submit to the BDE an Agreement Package consisting of the following:

- one completed copy of the Utility Agreement Report,
- a transmittal memorandum explaining any unusual situations or conditions,
- one copy of the Agreement,
- three copies of the cost estimate, and
- two copies of the final plans for the adjustment. These plans should show the existing and proposed utility location and the right-of-way limits. (The plans shall be on 11 in x 17 in sheets unless 8½ in x 11 in sheets are to be used for the final plans. See Section 63-3.03).

Retain one copy of the Agreement Package in the utility file and telecommunicate one copy of the Agreement to the BDE. If the adjustment is to be performed under a continuing contract between the Utility and its contractor; provide documentation that the proposal has been reviewed and is the most cost-effective means available.

The BDE will review all adjustment plans and estimates as submitted by the district. If any discrepancies or reimbursement eligibility issues are found, they will be referred back to the district for explanation or for the Utility's disposition. The following process will apply:

1. Upon receipt of the Agreement Package, the Administration Group of the Agreements Unit logs receipt of the Package and distributes it to the proper member of the Unit who will review the plans, estimate, and Agreement. Concurrently, the Administration Group makes a funding request to the Program Support Unit of the BDE's Project Development and Implementation Section.

2. After the Agreement has been reviewed and approved, two original copies of the Agreement, each containing a copy of the cost estimate and special provisions, are sent to the Utility for execution. After execution, the Utility returns both originals to the Department where they are advertised in the Transportation Bulletin-Weekly Procurement for two weeks and then executed by the Director of the Division of Highways. Agreements over $250,000 also require signatures by the Director of Finance & Administration, Chief Counsel, and Secretary of Transportation.

3. When the Agreements are fully executed and the funding approved, one original Agreement is returned to the Utility, one conformed copy is sent to the district, and the remaining original Agreement is placed in the BDE file.

4. The district sends a letter authorizing the Utility to proceed with the adjustment(s).

5. The Administration Group of the Agreements Unit compiles a Utility Adjustment Record containing two copies of the fully executed Agreement, five copies of the prepared Contract Obligation Document (COD), and copies of applicable certifications which are sent to the Bureau of Accounting and Auditing.

6. The Bureau of Accounting and Auditing reviews the documents, establishes and files the COD with the Comptroller, and returns one copy of the entered COD to the Agreements Unit. A copy of the entered COD then is sent to the district for processing of bills. The original COD is placed in the BDE file.

6-6.03 Emergency Agreements

If it is determined that a reimbursable utility adjustment is required after highway construction has begun, the district will immediately notify the BDE of the necessity and extent of the required adjustment and provide an Agreement Package (see Section 6-5.02). The BDE will expedite Agreement preparation and processing.

In extreme cases when the adjustment has considerable impact on the progression of highway construction, the district, with concurrence from the BDE, may authorize the Utility to begin its adjustment(s) prior to completion of the Agreement. Inform the Utility that no reimbursement can be made until the Agreement is completed and executed. In this case, the District Engineer must submit a memorandum to the Director of Highways describing the nature and extent of the emergency.

6-6.04 Approval of Bids

When a Utility is authorized to proceed with all or a portion of an adjustment via contract with an outside contractor rather than its own personnel, the Utility will furnish the district with a list of qualified contractors to whom invitations for bids will be sent prior to solicitation. The list of bidders is for informational purposes only and does not require approval by the State; however, the State is to be notified of the selected bidder.

6-7 ADJUSTMENT PROCEDURES

6-7.01 Change Orders

If a plan or estimate change becomes necessary after the Agreement has been executed, the district initiates the change. Extensively review all change orders or amendments to Agreements. Fully explain any deviations between the actual cost or the revised estimate and the original estimate. Submit supporting documentation (e.g., reason for change, copies of revised estimate, statements of actual cost) with the request for the change order or amendment to the Agreement. Changes shall not be deemed accepted until approved by the BDE.

If the scope, nature, and/or cost of the adjustment has changed significantly, an amendment to the Agreement may be necessary. If it is deemed that such an amendment is needed, submit an Agreement Package for the amendment to the BDE for processing. See Section 6-5.02.

For minor modifications in scope, nature, and/or cost, the district should complete Form BD 804 and set forth the following information:

- the extent of the change,
- an estimate of the additional costs,
- the justification for the change, and
- a request for authorization of the change.

Forward Form BD 804 to the BDE for processing. Notification of the change is received through the BDE.

6-7.02 Final Billing

The following applies to processing the final bill for utility adjustments:

1. Preparation of Final Billing. Ensure that the final bill complies with all requirements of the *Federal-Aid Policy Guide*, Part 645 A and B.

2. Review of Final Billing. The district will review the final bill to determine whether or not the final bill reflects the labor, equipment, and materials used in the adjustment.

3. Billing Discrepancies. If the final bill exceeds the estimated amount of the adjustment and Form BD 804 was not submitted in the interim, explain the increase and submit appropriate recommendations on Form BD 804.

4. Submission of Final Billing. Submit final bills and recommendations to the Bureau of Accounting and Auditing.

Chapter Seven

Railroad Coordination

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

Chapter Seven
RAILROAD COORDINATION

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CHAPTER SEVEN
RAILROAD COORDINATION

7-1 ADMINISTRATIVE FUNCTIONS

7-1.01 Selection of Projects

The Federal Highway Safety Act authorizes funds for the improvement of highway-railroad safety by installing or upgrading warning devices, replacing crossing surfaces, and improving highway approaches at highway-railroad grade crossings.

The available program funds are allocated as a specific dollar amount between the Bureaus of Design and Environment and Local Roads and Streets with recommendations for distribution among the various types of projects (e.g., surfaces, warning devices, abandoned crossings) for each Bureau's program.

BDE allocates funds to each district according to a weighted average of a district's share of the total track-lanes of crossings in the State, modified by demonstrated need. A portion of the funds may be reserved for Diagnostic Team high-crash projects. Each district prepares a list of candidate projects and proposed types of improvement for inclusion in the upcoming year's program, based on the following criteria:

- the expected crashes (see Section 7-3.02 to determine if existing warning devices are sufficient for the expected crashes);
- crash history;
- public complaints;
- individual observations made during the annual grade crossing inspection (the credibility of the existing warning devices should be carefully checked); and
- Railroad company's request for improvements.

For additional guidance on the selection of projects, review the FHWA *Railroad-Highway Grade Crossing Handbook.* Consider the following when determining project selection:

- removal of non-complying guardrail around warning device bases;
- removal of abandoned at-grade crossings;

- replacement of rough crossing surfaces; and

- milling of the highway approaches to crossings instead of complete removal of the crossing where the crossing surface has settled, but otherwise is still in good condition.

Make every attempt to coordinate any proposed warning device projects on crossings of State-maintained highways where track circuitry overlaps those of adjacent local crossings. Exchange this information with the Bureau of Local Roads and Streets to coordinate the work and programming.

BDE, working with the Division of Traffic Safety, Bureau of Statewide Program Planning within the Office of Planning and Programming, and the Illinois Commerce Commission, may identify a list of high-crash locations not included in the district's lists. BDE will convene a "Diagnostic Team" to investigate each crossing on the list. BDE will document any deficiencies discovered and solutions proposed.

The priority lists are finalized and published as the "FY 20__ Highway Safety Construction Program." This publication becomes the official program of the Department. The selected projects are then sent to FHWA by BDE with a request for authorization as soon as the Federal funds become available. The projects are then administered as Federal-aid projects under the Project Oversight Agreement.

7-1.02 Financial Participation

7-1.02(a) Grade-Separation Improvements

The following financial arrangements will apply:

1. New Structure — Department Project. Where a new grade-separation structure will be constructed as a result of a project initiated by the Department, 100% of the cost will be borne by the Department except for the following:

   a. Active Warning Devices. Where the principal grade crossing or crossings, at which active warning devices are in place or ordered to be installed by the Illinois Commerce Commission, will be closed after completion of the project, the Railroad will be required to bear 5% of the cost of the structure and approaches.

      Where the number of traffic lanes will increase, the Railroad's share will be based on the estimated cost of the theoretical structure and approaches required to separate the grade for the existing number of traffic lanes.

   b. Additional Track(s). Where the Railroad has no definite plan for the installation of additional future tracks within a reasonable time, the Railroad will be responsible

for 100% of the increased costs due to providing space for the additional future track(s).

2. New Structure — Railroad Project. Where a new grade-separation structure will be constructed as a result of a Railroad-initiated project, the Railroad will be responsible for 100% of the cost.

3. Existing Structure — Department Projects. Where an existing grade-separation structure on a State highway will be reconstructed as a result of a project initiated by the Department, 100% of the cost will be borne by the Department; however, this policy will not abrogate the covenants of any existing agreement which remains in effect containing provisions for maintenance or reconstruction of the structure.

4. Existing Structure — Railroad Project. Where an existing grade-separation structure (maintained by the Railroad) on a State highway is determined by the Department to be unsafe due to physical damage or deterioration and must be reconstructed, the Railroad will be responsible for 100% of the estimated cost of the theoretical structure required to reconstruct the existing structure to its original design loading or 100% of the estimated cost to repair the existing structure to its original design loading.

7-1.02(b) Grade-Separation Maintenance

The Department will maintain new grade-separation structures on Department initiated construction. Any structures constructed as a Railroad initiated project will be maintained by the Railroad. In all cases, the Railroad will maintain the track, track bed, and railroad appurtenances.

When the Department is responsible for the maintenance of an existing structure, either by the terms of an agreement or by an Illinois Commerce Commission Order, maintenance of the Department initiated reconstructed structure will remain the responsibility of the Department.

When the Railroad is responsible for the maintenance of an existing structure, either by the terms of an agreement or by an Illinois Commerce Commission Order, maintenance of the reconstructed structure will remain the responsibility of the Railroad unless an exception is granted.

When it is in the best public interest, the Department may relieve a railroad of its maintenance obligations for a structure in return for a lump-sum payment based on the capitalized cost for perpetuation of the structure. This capitalized cost will be determined according to the following:

1. Service Life. For calculations, assume that no routine maintenance is performed and that each of the structural components will be replaced at the end of its service life in

perpetuity. For most structures, the service life of the substructure will be assumed to be 100 years and, for the superstructure, 50 years. Calculate the costs for replacing the existing structural components at current prices.

2. Interest Rate. Determine the interest rate by calculating the average annual rate of return to the nearest 0.25% increment using the current fiscal year and the two preceding fiscal years. The annual rate of return for each fiscal year can be obtained from the State Treasurer's Office.

3. Capital Cost. The capitalized cost should be derived using the equation shown in Figure 7-1A.

$$C = y\left[\frac{1}{(1+i)^n}\right] + x\left[\frac{1}{(1+i)^m}\right] + \left[\frac{\left(y\left[\frac{i}{(1+i)^{50}-1}\right]\right)}{i}\right]\left[\frac{1}{(1+i)^n}\right] + \left[\frac{\left(x\left[\frac{i}{(1+i)^{100}-1}\right]\right)}{i}\right]\left[\frac{1}{(1+i)^m}\right]$$

Where:

C	=	capitalized cost
x	=	cost of replacing substructure, in kind, at current prices
y	=	cost of replacing superstructure, in kind, at current prices
m	=	remaining life of substructure, years
n	=	remaining life of superstructure, years
100	=	service life of substructure, years
50	=	service life of superstructure, years
i	=	interest rate, decimal

$\left[\frac{1}{(1+i)^m}\right]$ = single payment present worth factor for *m* years

$\left[\frac{1}{(1+i)^n}\right]$ = single payment present worth factor for *n* years

$\left[\frac{i}{(1+i)^{100}-1}\right]$ = sinking fund factor for 100 years

$\left[\frac{i}{(1+i)^{50}-1}\right]$ = sinking fund factor for 50 years

$x\left[\frac{1}{(1+i)^m}\right]$ = present cost which expresses the cost of replacing the substructure *m* years from the present

$y\left[\frac{1}{(1+i)^n}\right]$ = present cost which expresses the cost of replacing the superstructure *n* years from the present

$\left[\frac{\left(x\left[\frac{i}{(1+i)^{100}-1}\right]\right)}{i}\right]\left[\frac{1}{(1+i)^m}\right]$ = present cost which expresses the cost of replacing the substructure at 100-year intervals in perpetuity beginning at a point in time *m* years from the present

$\left[\frac{\left(y\left[\frac{i}{(1+i)^{50}-1}\right]\right)}{i}\right]\left[\frac{1}{(1+i)^n}\right]$ = present cost which expresses the cost of replacing the superstructure at 50-year intervals in perpetuity beginning at a point in time *n* years from the present

CAPITAL COST DETERMINATIONS

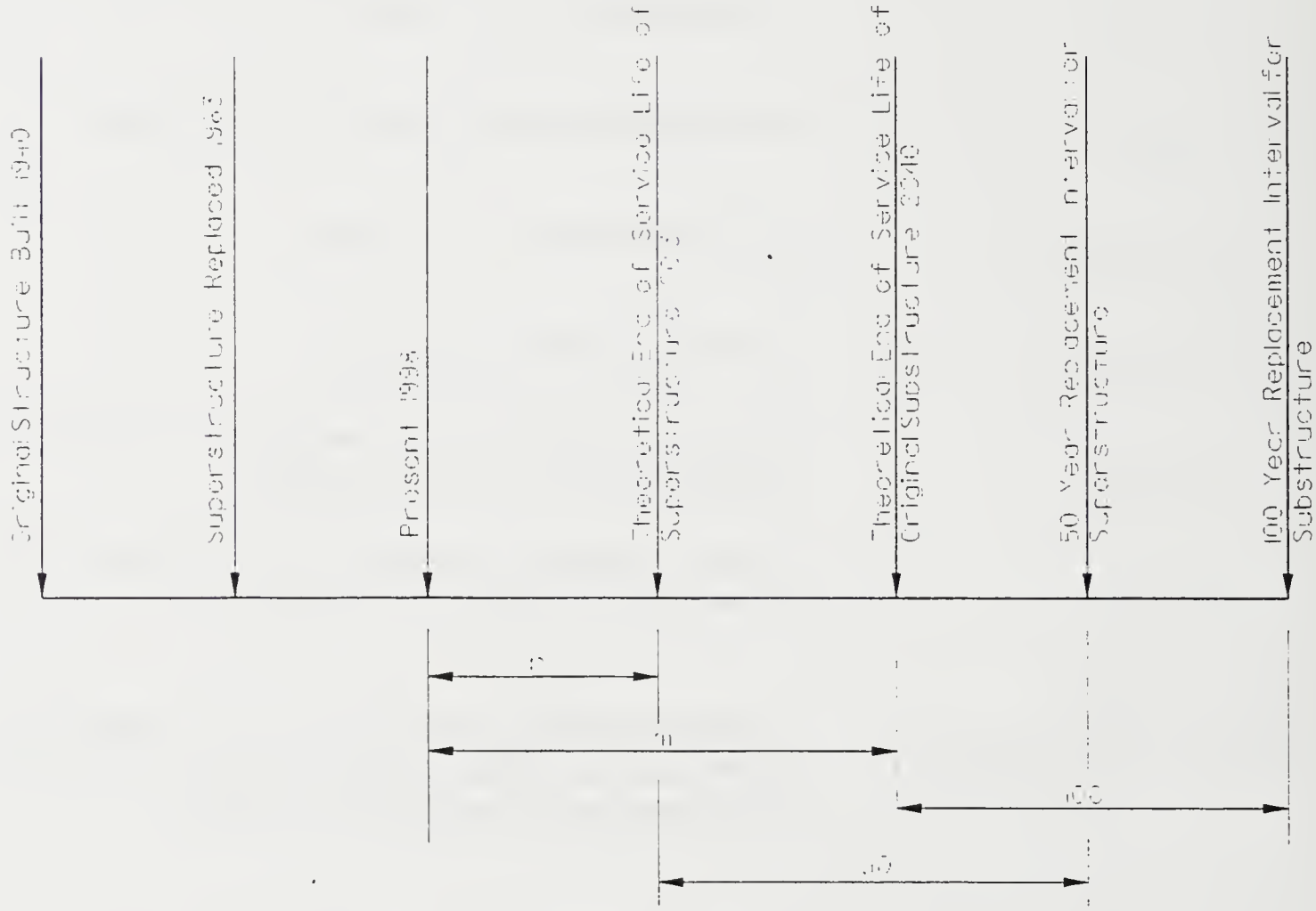
Figure 7-1A

* * * * * * * * * * *

Example 7-1.1

Given: An original highway-railroad grade structure was built in 1940. In 1963, the original superstructure was removed and replaced. Maintenance of the structure has been borne equally by the Railroad and the Department by Illinois Commerce Commission Order.

x = $52,003 - Cost to replace the substructure
y = $56,956 - Cost to replace superstructure
m = 42 years - Remaining life of substructure
n = 15 years - Remaining life of superstructure
i = 6% - Interest rate



Problem: A Railroad has indicated its interest in being relieved of its maintenance obligation for a highway-railroad grade-separation structure in return for a lump-sum payment to the Department in a sum equivalent to the capitalized cost for perpetuation of the structure.

Solution:

$$x\left[\frac{1}{(1+i)^m}\right]=52{,}003(0.0865) = \$4498.26$$

$$y\left[\frac{1}{(1+i)^n}\right] = 56{,}956(0.4173) = \$23{,}767.74$$

$$\left[\frac{\left(x\left[\frac{i}{(1+i)^{100}\ \ 1}\right]\right)}{i}\right]\left[\frac{1}{(1+i)^m}\right] = \left[\frac{(52{,}003[0.00018])}{0.06}\right][0.0865] = \$13.49$$

$$\left[\frac{\left(y\left[\frac{i}{(1+i)^{50}\ \ 1}\right]\right)}{i}\right]\left[\frac{1}{(1+i)^n}\right] = \left[\frac{(56{,}956[0.00344])}{0.06}\right][0.4173] = \$1362.69$$

Capitalized Cost = $ 29,642.18

Railroad share (50%) = 0.5 (29,642.18) = $14,821.09

* * * * * * * * * * *

7-1.02(c) Grade Crossing Participation

The Department opposes any new at-grade crossing when such crossing involves a railroad line used for passenger train operations, regardless of the operator or frequency of the trains or the location of the crossing.

Where a new grade crossing of a freight rail line is established or an existing grade crossing will be reconstructed on a State highway as a result of a highway improvement project initiated by the Department, the Department will be responsible for 100% of the cost for constructing the crossing.

Where a new grade crossing is established or an existing grade crossing will be reconstructed on a State highway as a result of a railroad reconstruction, rehabilitation, or maintenance

program initiated by the Railroad, the Railroad will be responsible for 100% of the cost of constructing or reconstructing the crossing.

When the Department determines that an existing grade crossing on a State highway is at the end of its service life and in need of reconstruction or when the Department determines that conditions warrant reconstruction, the Department may participate toward the cost of the new construction or reconstructing the crossing.

If an existing grade crossing on a State highway will be reconstructed or rehabilitated as a result of a project initiated by other than the Department or the Railroad and the Department has determined that the installation is necessary and in the best public interest, the Department may participate in the cost in proportion to the benefits to the motoring public.

Where all or any portion of the cost of new construction, reconstruction, or rehabilitation of a crossing will be provided by the Department, participation by the Department will be limited to the materials, labor, and equipment required to construct, reconstruct, or rehabilitate the crossing.

7-1.02(d) Grade Crossing and Warning Device Maintenance

The Railroad, or the track owner, is responsible for maintenance of the grade crossing and the warning devices, actuating devices, and circuitry.

7-1.02(e) Grade Crossing Warning Device Improvements

The Department requires the installation of appropriate warning signs and devices at all highway-railroad grade crossings. The Department's participation in the cost of these devices is contingent upon Department concurrence in the type of device required, the degree of sophistication necessary in the activating equipment, and the degree of contribution to highway capacity and safety.

Funding for all Department initiated projects will be determined on a priority basis based on vehicular traffic, railroad traffic, highway classification, and the availability of funds.

The Department, the Railroad, or agencies other than the Department may propose changes in either the type of warning devices or in the method of actuation at existing crossings. Where the Department has determined that these changes will result in mutual benefits to all parties involved, the Department may participate in the costs in proportion to the benefits to the motoring public.

The Department will generally bear 100% of the cost of the improvements for the following conditions:

- Where the project includes the installation of warning devices at new grade crossings, the relocation of existing warning devices, or the installation of additional devices at existing crossings that are required as the result of highway improvement projects initiated by the Department.

- Where the Department has determined that the warning devices in place at an existing grade crossing are no longer adequate to provide for the safety of the motoring public and that additional or supplemental warning devices are deemed necessary.

- Where the Department has determined that a change is necessary in the method of actuation of automatic warning devices at existing crossings for the improvement of vehicular operations.

The Railroad will be responsible for 100% of the cost of the improvements where changes to an existing grade crossing or the construction of a new grade crossing are necessitated as the result of improvement or maintenance programs initiated by the Railroad or changes in rail operations (e.g., number of movements, speeds).

7-1.02(f) Grade Crossing Modification on a Permit Crossing

Where a railroad grade crossing has been created as the result of a permit issued by the Department, the Railroad or track owner shall take prompt action to adjust, reconstruct, or otherwise modify the crossing and/or warning devices as required by any highway improvements upon receiving a request from the Department. The Railroad or track owner will be responsible for 100% of the costs of such improvements. See *92 Illinois Administrative Code 530, Accommodation of Utilities on Right-of-Way of the Illinois State Highway System.*

7-1.03 Preliminary Engineering

7-1.03(a) General

In most instances, the Department prepares the plans for new construction, modernization, or reconstruction of highway structures, drainage facilities, and the approaches. Occasionally, the Railroad will prepare plans for a structure carrying the railroad over a highway.

All plans, specifications, and special provisions prepared by either the Department or the Railroad are subject to approval by the other party, and no changes will be allowed by either party without the consent in writing of the other party.

7-1.03(b) Reimbursement

Preliminary engineering performed by Railroad forces or by consultants employed either by the Railroad or by IDOT on highway-railroad grade separations is reimbursable with Federal or State funds.

7-1.03(c) Railroad Structures Designed By or For the Railroad

This section applies to a railroad structure over a State highway. When the Railroad elects not to perform the structure design with its own forces and the Department does not have the forces available to perform the design within the required schedule, a consultant may be employed to perform the design. Ordinarily, the Department will select a suitable consultant from a list of consultants approved by the Railroad. The design work is then performed by agreement between the Department and the consultant with the Railroad's approval.

In certain cases, where justified, the Railroad will select a consultant to design the structure and enter into an agreement with the consultant for the design. The selection of the consultant and the terms, including the fee, is subject to IDOT approval.

In those projects where Federal-aid funds are anticipated for reimbursing the Railroad's consultant for the cost of preparing the plans for a structure, the preliminary engineering cost must be programmed before IDOT can authorize the preparation of such plans.

7-1.03(d) Preliminary Engineering Portion of Railroad Force Account Work

The Railroad will generally perform the preliminary engineering with its own forces for the railroad force account work covered by construction agreements between the Department and the Railroad.

In special instances (particularly warning device system design), the Railroad may use the services of a consultant retained by the Railroad to perform the preliminary engineering.

7-1.03(e) Programming

When the method of treating a railroad crossing has been determined, it is essential that the district plan, initiate, and coordinate the programming and preliminary engineering portion of the proposed construction.

7-1.04 Commerce Commission Hearings

7-1.04(a) Commerce Commission Jurisdiction

Rail carriers (Railroads) are corporations engaged in the transportation of passengers and/or goods for hire in the State of Illinois, as defined in the *Illinois Commercial Transportation Law (625 ILCS 5/18c)*, and come under the jurisdiction of the Illinois Commerce Commission. The *Code* states, in part:

> *No public road, highway, or street shall hereafter be constructed across the track of any rail carrier at grade, nor shall the track of any rail carrier be constructed across a public road, highway, or street at grade, without having first secured the permission of the Commission;*

The Commission's rules, regulations, and requirements cover the construction, maintenance, division of cost, marking, and signalizing of highway and railroad crossings in the State.

7-1.04(b) Procedure Before the Commission

The Preliminary Engineering Section will work with the Office of Chief Counsel to prepare petitions to the Commission requesting issuance of an Order relative to the crossing of a railroad by a proposed highway improvement when the improvement requiring the crossing was initiated by the Department.

If a hearing is required, the Department must be represented at the hearing to present the evidence through an expert witness who is familiar with the project.

After the case is heard by a duly authorized examiner of the Commission, an Order will be entered either denying or granting the request of the petitioner.

When a Railroad desires to establish a new crossing with a highway, it will file a petition with the Commission and present its case at a hearing which will be attended by representatives from the Office of Chief Counsel, the Preliminary Engineering Section, and the district involved when the Department is a respondent. This action is followed by the decision of the Commission as outlined in its Order. The Railroad must also acquire a permit from the district according to the Department's *Accommodation of Utilities on Right-of-Way of the Illinois State Highway System.*

7-1.05 Procedure for Removing Abandoned Railroad Structures and Grade Crossings

Many highway-railroad grade-separation structures, at-grade crossings, and related track materials of rail lines that have been abandoned remain in place on intersecting public highways. These structures constitute obstructions and encroachments on these highways and should be removed.

Before a Railroad company's right to operate on a particular line has been terminated (i.e., the rail line is abandoned), the Railroad company had authority from the Illinois Commerce Commission to obstruct the highway with the structure in question. After the right to operate is terminated, there remains no authority to obstruct the highway. Therefore, the Railroad company may be treated as any other person obstructing the highway.

The *Illinois Highway Code (605 ILCS 5/9-117)* establishes the procedure for identifying and removing obstructions from public highways. This procedure may be used if it is clear that the highway authority has absolutely no responsibility. Because sole responsibility by a Railroad is uncommon, it is unlikely that this procedure for removing obstructions will be used often. The Office of Chief Counsel may be consulted to help determine whether this procedure is appropriate in a particular situation.

The *Illinois Commercial Transportation Law (625 ILCS 5/18c-7401)* provides an additional statutory means for removing railroad structures from public highways. Under this law, the Illinois Commerce Commission, after notice and hearing, has the authority to order the removal of abandoned tracks and overhead railroad structures crossing highways, waterways, or other railroads. The Commission may equitably apportion the costs between the parties. This may be based on the assignment of original construction costs and/or the present maintenance responsibility.

Therefore, after determining that the abandonment is final, as per notice from the Bureau of Railroads, and that the facility can be removed and after the district determines that the Railroad refuses or delays the removal, a request should be made to BDE for the removal. BDE will ensure the abandonment is final and request the Office of Chief Counsel to file a Petition for an Order requiring the removal of the facility. The district should be aware that the Commission may order the Department to bear part or all of the cost of removal.

If the Department determines that it should pay the entire cost of structure removal or that the structure presents an immediate danger to the traveling public, the Department may remove the structure without the permission of the Railroad, its successor in interest, or the Illinois Commerce Commission.

Remember that only the Railroad's right to operate is being abandoned. The Railroad may wish to sell its structures or may wish to use the structure at another location. If the Department agrees that the Railroad owns the structure on the highway right-of-way, the Railroad should be allowed to remove it. If the Department removes a structure owned by the Railroad or its assignee, the removed materials should be made available to the rightful owner.

7-1.06 Acquisition of Railroad Property

When the Department requires property interest from a Railroad to complete a highway improvement, sufficient lead time to acquire these interests is essential. It is critical that once it

is determined that a project will require the acquisition of property owned or under the control of a Railroad that the Department's Land Acquisition personnel be informed.

7-1.06(a) Acquisition of Railroad Nonoperating Property

The acquisition of nonoperating Railroad property is accomplished according to the criteria outlined in the *Land Acquisition Policies and Procedures Manual*, and the *Federal-Aid Policy Guide*.

7-1.06(b) Acquisition of Railroad Operating Property

Where a proposed highway improvement will cross or longitudinally use a Railroad's operating property, the Department generally will acquire a permanent easement to construct and maintain the improvement. There will be instances when a highway project will require only the temporary use of Railroad property. When this situation occurs, permission to do work of a temporary nature on Railroad right-of-way will be included in the construction and maintenance agreements between the Department and the Railroad. When there is no agreement, permission to do work of a temporary nature will be obtained by the district Land Acquisition staff.

Occasions where payment for such acquisition may be established and paid are as follows:

1. Land Owned in Fee. When a value is indicated and the Railroad company owning the fee title to its operating right-of-way can continue to operate its facilities either in, above, below, or adjacent to the highway, the Department of Transportation will compensate the Railroad for the right-of-way needed according to the Department's *Land Acquisition Policies and Procedures Manual.* No compensation of any kind will be provided for the acquisition of right-of-way to construct a grade-separation facility where an existing highway grade crossing is eliminated.

2. Land Owned as an Easement. If a Railroad has only an easement for its operating right-of-way and can continue to operate its facilities either in, above, below, or adjacent to the highway, there will be no compensation paid to cross or longitudinally use any part of the right-of-way.

The Railroad shall execute the necessary documents to cover the rights or interests required for the highway project according to the criteria in the *Land Acquisition Policies and Procedures Manual*, regardless of whether or not it owns the fee title or easement. The *Land Acquisition Policies and Procedures Manual* provides the procedure to be used if condemnation is necessary. However, note that permission of the Illinois Commerce Commission is a prerequisite to the filing of the complaint for condemnation and motion for the right of immediate possession and the time required must be considered when scheduling the project.

7-2 AGREEMENTS

7-2.01 General

The Preliminary Engineering Section within BDE is responsible for the preparation and negotiation of formal Agreements between the Department and the Railroad. This includes railroad grade separation projects, grade crossing projects, or projects involving the installation of State facilities such as pipe culverts, storm sewers or underground electrical wiring on Railroad property, or any other work on Railroad property for improvements to the State highway system. The district should submit the necessary crossing data with sufficient lead time allowed for these negotiations. Typically, a year or more is required.

The Agreement will cover:

- division of work and expense involved between IDOT and the Railroad in connection with the crossing improvement;
- responsibilities for the future maintenance of the improvement;
- establishment of the Railroad's share of the cost as determined under the provisions of any one of the several classifications provided in the *Federal-Aid Policy Guide* and Section 7-1.02;
- reference to the acquisition of property rights, (see Section 7-1.06);
- reimbursement of the costs incurred by the Railroad according to the requirements of the *Federal-Aid Policy Guide*;
- coverage of liability during construction operations; and
- reference to or identification of plans and plan approval.

7-2.02 District Data

When Federal-aid funds are proposed, the district will be required to submit the necessary data for programming the project together with the necessary data for negotiations with the Railroad.

The district should submit a report to BDE containing reproducible drawings of the crossing plan prepared in sufficient detail showing the following:

1. Grade Separations. Include the following in the report:
    - existing conditions in the crossing area;

- a plan and profile of the track or tracks and of the proposed highway improvement for 500 ft (150 m) in each direction from the intersection of the highway and railroad centerlines;
- typical highway and track cross sections;
- railroad and highway right-of-way limits;
- distance to a railroad reference marker (i.e., mile post);
- railroad communication lines including the location of poles and height of wires;
- existing and proposed drainage ditches, structures, and the direction of flow affecting the railroad;
- construction details of existing and/or proposed grade crossings in the vicinity; note the type and location of warning devices;
- details of any track adjustments or runaround tracks proposed, including staging;
- details for detour road crossings and proposed temporary warning devices, including a plat and description of temporary easement if required;
- number and speeds of passenger and freight trains using the track or tracks daily;
- plat and description of the temporary easement as required by Section 7-3.03 for the possible location of the contractor's temporary grade crossing; and
- all other data pertinent to the project.

2. Grade Crossings. For this report, full-size plan sheets will not be required. Include the following in the report:

   a. Existing Grade Crossing. At existing grade crossings, provide the following:

      - number of mainline and subsidiary tracks;
      - type, width, and condition of the existing crossing(s);
      - type and locations of the existing warning devices at the crossing;
      - number and speeds of passenger and freight trains using the crossing daily; and

- current and ten-year ADT of the highway.

b. Proposed Grade Crossing. For new grade crossings, provide the following:

- number of tracks;
- type and width of crossing(s);
- types and locations of the proposed warning devices;
- anticipated date of construction; and
- any unusual conditions bearing on the proposed work.

c. Alternative Methods of Accommodating Traffic. For most projects, include a recommended method for accommodating traffic in the report. Methods are discussed in Chapter 13 and Departmental Policy TRA-3, "Reconstruction and Repair of Railroad Grade Crossings."

7-2.03 Negotiation Procedure

The railroad Agreement is normally prepared by the Preliminary Engineering Section, Agreements Unit, and sent to the Railroad for review. A copy is also furnished to the district for its review.

When the Railroad receives the Agreement, the Railroad will begin preparation of the plans and cost estimates for the railroad force account work involved. Upon completion, the Railroad will submit the plans and cost estimates to the Department for review.

After the plans and cost estimates have been approved by the Department and the Agreement has been executed by the Railroad, the Agreement is returned to BDE for execution by the Department.

Upon full execution of the Agreement by the Railroad and the Department, one original copy is retained for the BDE file and the Agreement Unit distributes copies of the Agreement to the following:

- Railroad (1 original copy plus any requested copies);
- Illinois Commerce Commission, in formal cases only (1 original copy and 2 copies);
- district (3 copies);
- Bureau of Accounting and Auditing (2 copies at the time the contract obligation document is established); and
- Project Control (1 copy).

7-2.04 Authorization Procedure

When a contract is awarded for a highway improvement which includes work in the area of a highway-railroad grade crossing, and when the affected Railroad is required to adjust its facilities as a part of the improvement, construction delays may be encountered. Generally, the Railroad is authorized to assemble its materials and perform its construction work at the time the contract has been scheduled for letting or at the time the contract is awarded. Because time is required by the Railroad to order materials and schedule work crews, it is not uncommon for the highway contractor to be unable to proceed with its work in the area of the crossing. Although the delay may not create problems for the highway contractor or for the Department, it does represent a hardship to the motoring public.

To avoid delays and to facilitate construction, the district is allowed to review each project individually to determine if the contractor's operations will be facilitated by authorizing the Railroad to proceed prior to the letting advertisement or award of the highway contract. The district will authorize the Railroad to proceed with the force account work according to the executed railroad Agreement. The authorization should be issued to the same Railroad official to which BDE sent the executed Agreement.

Before an early authorization is given, a most probable highway letting date should have been established so that any necessary coordination between the Railroad and the contractor can be undertaken. Proper timing can also reduce any interim roadway maintenance.

If Federal-aid funds are used, the crossing work also must be programmed and authorized before the advance Railroad work is authorized. The district must request and obtain approval for early authorization from BDE's Project Development/Implementation Section, Program Support Unit and send a copy of the district authorization letter to the Railroad to BDE.

BDE will authorize the railroad work for individual safety crossings not related to highway contracts.

7-2.05 Adjustment Procedures

7-2.05(a) Change Orders

If a plan or estimate change becomes necessary after the Agreement has been executed, the district initiates the change. Extensively review all change orders or amendments to Agreements. Fully explain any deviations between the actual cost or the revised estimate and the original estimate. Submit supporting documentation (e.g., reason for change, copies of revised estimate, statements of actual cost) with the request for the change order or amendment to the Agreement. Changes will not be deemed accepted until approved by BDE.
If the scope, nature, and/or cost of the adjustment has changed significantly, an amendment to the Agreement may be necessary. If it is deemed that such an amendment is needed, submit an Agreement report for the amendment to BDE for processing. See Section 7-2.02.

For minor modifications in scope, nature, and/or cost, the district should complete Form BD 804 and set forth the following information:

- the extent of the change,
- an estimate of the additional costs,
- the justification for the change, and
- a request for authorization of the change.

Forward Form BD 804 to BDE for processing. Notification of the change is received through BDE.

Form BD 804, Request for Authorization for Costs Involving Utility, Railroad, or Local Agency Agreement, may be accessed through the "FORMS" button in Word on the LAN and is available on IDOT web site at http://www.dot.state.il.us/desenv/deform.html.

7-2.05(b) Final Billing

The following applies to processing the final bill for railroad adjustments:

1. Preparation of Final Billing. Ensure that the final bill complies with all requirements of the *Federal-Aid Policy Guide*, Part 140, Subpart I.

2. Review of Final Billing. The district will review the final bill to determine whether or not the final bill reflects the labor, equipment, and materials used in the adjustment.

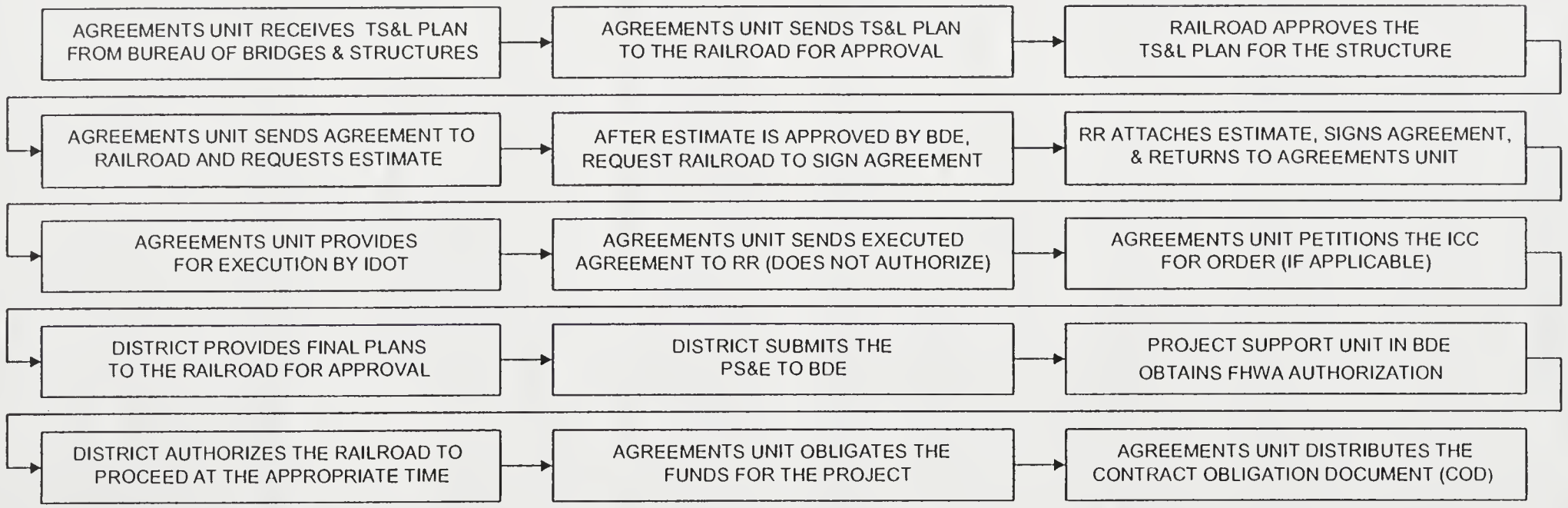
3. Submission of Final Billing. Submit final bills and recommendations to the Bureau of Accounting and Auditing for audit.

4. Billing Discrepancies. If the final cost as approved by audit exceeds the estimated amount of the adjustment and Form BD 804 was not submitted in the interim, explain the increase and submit appropriate recommendations on Form BD 804.

7-2.06 Railroad Agreement Process

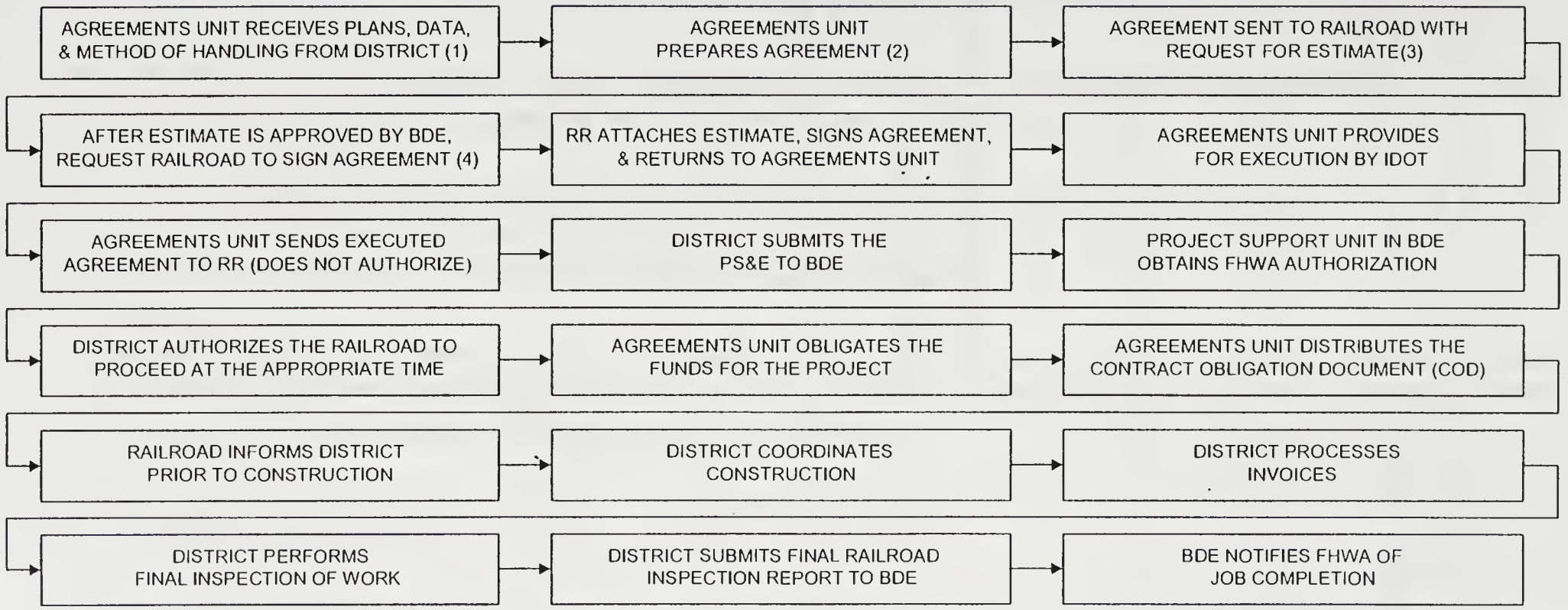
Figures 7-2A, 7-2B, and 7-2C illustrate flowcharts for the agreement negotiation processes for the following projects:

- Figure 7-2A — grade separation structure projects,
- Figure 7-2B — grade crossings/non-safety projects, and
- Figure 7-2C — grade crossings/safety projects.



RAILROAD AGREEMENT PROCESS
(Grade Separation Structure Projects)

Figure 7-2A



(1) District submittal should indicate whether an interconnection is needed, including any timing requirements for the railroad control circuitry. Interconnection plans and requirements will be approved by the Central Bureau of Operations prior to submittal to the Railroad.

(2) When signal improvements are involved, the typical agreement states the following:

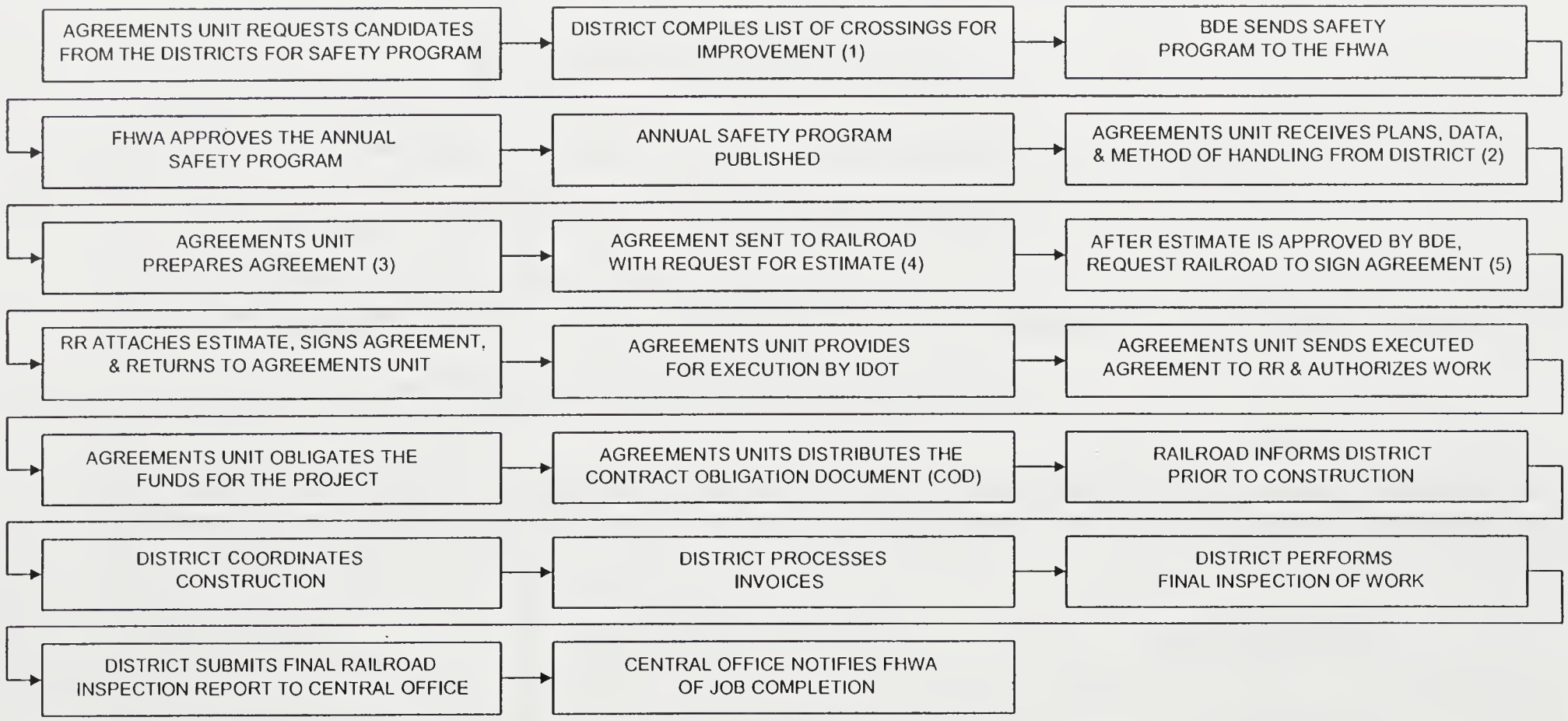
The COMPANY will petition the Illinois Commerce Commission in accordance with 92 Illinois Administrative Code 1535 *to take jurisdiction in this matter and to enter such orders as may be necessary.*

(3) The transmittal to the Railroad should indicate any interconnection requirements.

(4) The Railroad's interconnection plans will be approved by the Central Bureau of Operations prior to the approval of the estimate.

RAILROAD AGREEMENT PROCESS
(Grade Crossing/Non-Safety Projects)

Figure 7-2B



(1) List based on annual inspections, expected accidents, and complaints.

(2) District submittal should indicate whether an interconnection is needed, including any timing requirements for the railroad control circuitry. Interconnection plans and requirements will be approved by the Central Bureau of Operations prior to submittal to the Railroad.

(3) When signal improvements are involved, the typical agreement states the following:

> *The COMPANY will petition the Illinois Commerce Commission in accordance with* 92 Illinois Administrative Code 1535 *to take jurisdiction in this matter and to enter such orders as may be necessary.*

(4) The transmittal to the Railroad should indicate any interconnection and requirements.

(5) The Railroad's interconnection plans will be approved by the Central Bureau of Operations prior to the approval of the estimate.

RAILROAD AGREEMENT PROCESS
(Grade Crossing/Safety Projects)

Figure 7-2C

7-3 DESIGN FUNCTIONS

7-3.01 General

As State highways and railroads are expanded or modernized, it is inevitable that new highway-railroad crossings will need to be established and that existing crossings will need to be modernized, reconstructed, or eliminated. Basically, there are two methods of accomplishing these crossings:

1. At-Grade Crossing. This method is where the highway and railroad intersect at the same elevation requiring proper warning to reduce the inherent hazard of collisions between trains and highway vehicles.

2. Grade Separation Crossing. This method is where the inherent collision hazard is eliminated by the construction of a structure that carries the highway over or under the railroad.

7-3.02 At-Grade Crossings

7-3.02(a) Selection Guidelines for Warning Devices

Warning devices will be warranted at all highway-railroad crossings where grades are not separated. Select the type of warning device according to the following:

1. General. At a minimum, provide reflectorized crossbucks, pavement markings, and advance warning signs as indicated in the *Illinois Manual on Uniform Traffic Control Devices* at all crossings.

2. Flashing Signals. Install flashing signals at crossings where the warrants for gates are not met and where the expected crash frequency equals or exceeds 0.02. Use Equation 7-3.1 and the factors in Figure 7-3A to determine the expected crash frequency.

$$ECF = A \times B \times T \qquad \text{Equation 7-3.1}$$

Where:

ECF = Expected Crash Frequency
A = Traffic factor, see Figure 7-3A
B = Component factor, see Figure 7-3A
T = Current number of trains per day

A Factors

VEHICLES PER DAY (10-YR. ADT)	FACTOR
250	0.000347
500	0.000694
1000	0.001377
2000	0.002627
3000	0.003981
4000	0.005208
5000	0.006516
6000	0.007720
7000	0.009005
8000	0.010278
9000	0.011435
10000	0.012674
12000	0.015012
14000	0.017315
16000	0.019549
18000	0.021736
20000	0.023877
25000	0.029051
30000	0.034757

B Factors — Basic Values for Existing Devices

Components	Basic Value Adjustments
Crossbucks, traffic volume less than 500 vehicles per day	3.89
Crossbucks, urban	3.06
Crossbucks, rural	3.08
Stop signs, traffic volume less than 500 vehicles per day	4.51
Stop signs	1.15
Wigwags	0.61
Flashing lights, urban	0.23
Flashing lights, rural	0.93
Gates, urban	0.08
Gates, rural	0.19

CRASH FREQUENCY FACTORS
(Highway-Railroad Grade Crossings)

Figure 7-3A

3. Cantilevered Flashing Signals. Use cantilevered flashing signals, in addition to other warning devices, on multilane highways that qualify for active warning devices and where there is the possibility of a truck blocking the view of the roadside signals. Also, consider providing cantilever signals at high-frequency crash locations that possibly could be improved by more visible signals.

4. Gates and Flashing Signals. Provide flashing signals and gates where one or more of the following conditions are met:

   - multiple mainline railroad tracks;
   - multiple tracks at or in the vicinity of the crossing which may be occupied by a train or locomotive, so as to obscure from view the movement of another train approaching the crossing;
   - high-speed train operation combined with limited sight distance at either single or multiple track crossings;
   - a combination of high speeds and moderately high volumes of highway and railroad traffic;
   - either a high volume of vehicular traffic, high number of train movements, substantial numbers of school buses or trucks carrying hazardous materials, unusually restricted sight distance, continuing crash occurrences, or any combination of these conditions;
   - the expected crash frequency for flashing lights exceeds 0.02 and the benefit-cost ratio equals or exceeds 1.0 (the method for determining the benefit-cost ratio is shown in Figure 7-3B); and/or
   - a diagnostic team recommends them.

   In individual cases where a diagnostic team justifies that gates are not appropriate, gates will not be required.

5. High-Type Device. Provide a higher type of warning device which may not be justified under any of the preceding warrants based on continuing or potential crash occurrence due to:

   - unusual track or roadway geometrics;
   - restricted sight distance; and/or

Definitions: ECF = Expected Crash Frequency = A x B x T Equation 7-3.1

Z = Cost of crash = ratio of deaths and injuries per crash (average for latest 3 years in Illinois) x cost per crash (National Safety Council crash cost data which is documented and periodically updated by BDE)

U = Cost of flashing lights divided by expected life = _____

V = Yearly maintenance cost of flashing lights = _____

Y = Cost of gates divided by expected life = _____

W = Additional annual cost to maintain = _____ gates instead of flashing lights

L = Cost of grade separation divided by expected life = _____

M = Additional annual cost to maintain grade = _____ separation instead of gates

(Expected life can be assumed as 20 to 30 years.)

Step 1: ECF for present installation = A x B x T = _____

Step 2: ECF for proposed installation = A x B x T = _____

Step 3: Savings in ECF per year = Step 1 - Step 2 = _____

Step 4: Benefit = Z x Step 3 = $_____

Step 5: Cost of proposed installation = Y + W, or U + V, or L + M = $_____

Step 6: Benefit-Cost Ratio = Step 4 divided by Step 5 = _____

BENEFIT-COST RATIO ANALYSIS
(Highway-Railroad Crossings)

Figure 7-3B

- other unusual conditions, such as where there exist exceptional crash consequences to a large number of people as rail or highway passengers or as the result of a crash involving hazardous materials.

In other instances, a lower level device may be justified if concurred with by a diagnostic team.

Where the distance measured along the centerline of the highway between two regularly used adjacent tracks is less than 100 ft (30 m), consider the crossing as a multiple track crossing and install warning devices accordingly. Where the distance is 100 ft (30 m) or more, consider each crossing as individual crossings and signalize each according to the preceding warrants.

7-3.02(b) Example for Warning Device Selection

* * * * * * * * * * *

Example 7-3.1

Given: Urban Area
Crossbuck Protection
10-year ADT = 5000 Vehicles Per Day
Current Train Traffic = 5 Trains Per Day

Problem: Determine the appropriate warning devices that should be used at this crossing.

Solution: First determine the expected crash frequency of the existing crossbuck protection.

Expected Crash Frequency:
ECF = 0.006516 x 3.06 x 5
ECF = 0.10
ECF = 1 crash every ten years

Crash frequency is greater than 0.02 indicating the need for higher type device.

Try flashing lights:
"B" = 0.23

ECF = 0.006516 x 0.23 x 5
ECF = 0.01

Therefore, flashing lights are warranted.

* * * * * * * * * * *

7-3.02(c) Circuitry Devices

Refinements to activation circuitry should be recommended where the credibility of the warning devices could be beneficially increased. This includes shortening the signal "starts" to reflect reduced train speeds, or installing motion detectors or constant warning time devices (predictors). Consider the following:

1. Grade Crossing Predictors. Install grade crossing predictors (GCP/constant warning time) circuitry at crossings with ADT of at least 1000 vehicles and an average daily train traffic of at least 5 trains per day, or where there are concentrations of train or vehicular traffic during "rush hours" and where:

   - there are switching moves on the approach circuits,
   - at least 25% of the average daily trains operate at 25 mph (40 km/h) slower than the fastest train on the line, or
   - there is an unusual track and crossing geometry.

2. Motion Detectors.

   a. Gates. Where gates are present, provide motion detectors where there:

      - is stopping or other lengthy occupancy of the approach circuits,
      - are new gate installations,
      - is upgrading of crossings with flashing signals to gate installations, or
      - are major control circuitry changes required at existing installations.

   b. Flashing Signals. For flashing signals, provide motion detectors where there:

      - is stopping or other lengthy occupancy of the approach circuits,
      - are new flashing signal installations with ADT of 1000 vehicles or more and 5 or more trains per day, or
      - are major control circuit changes required by changes in or additions to flashing signals at crossings with ADT of 1000 vehicles or more and 5 or more trains per day.

   Note that the cost differential between grade crossing predictors (GCP/constant warning time) and motion detector circuitry is minor in comparison to the total installation cost. In addition, grade crossing predictor (GCP/constant warning time) circuitry can be adjusted to a wider, more variable set of train traffic conditions. When contemplating circuitry improvements, it is best to contact the

Railroad to make an accurate assessment of train traffic and a more informed decision on circuitry improvements.

7-3.02(d) Barrier Systems

The following will apply to barrier systems around warning devices:

1. General. Do not provide barrier systems (e.g., guardrail, impact attenuators) at railroad grade crossings except in extraordinary circumstances. In most cases, the roadside barrier presents more of a hazard than the railroad warning device it shields. Also, it may block a lateral escape route in advance of the signal. Extraordinary circumstances which may justify the use of a roadside barrier in the vicinity of a railroad crossing warning device include:

    - locations where the approach roadway is on a fill with side slopes steeper than 1V:3H and greater than 10 ft (3.0 m) in height,

    - locations with a high-accident history involving warning device where a cost-effective analysis demonstrates a roadside barrier is warranted, and

    - locations where there will be a temporary delay in moving warning devices for widening of a highway.

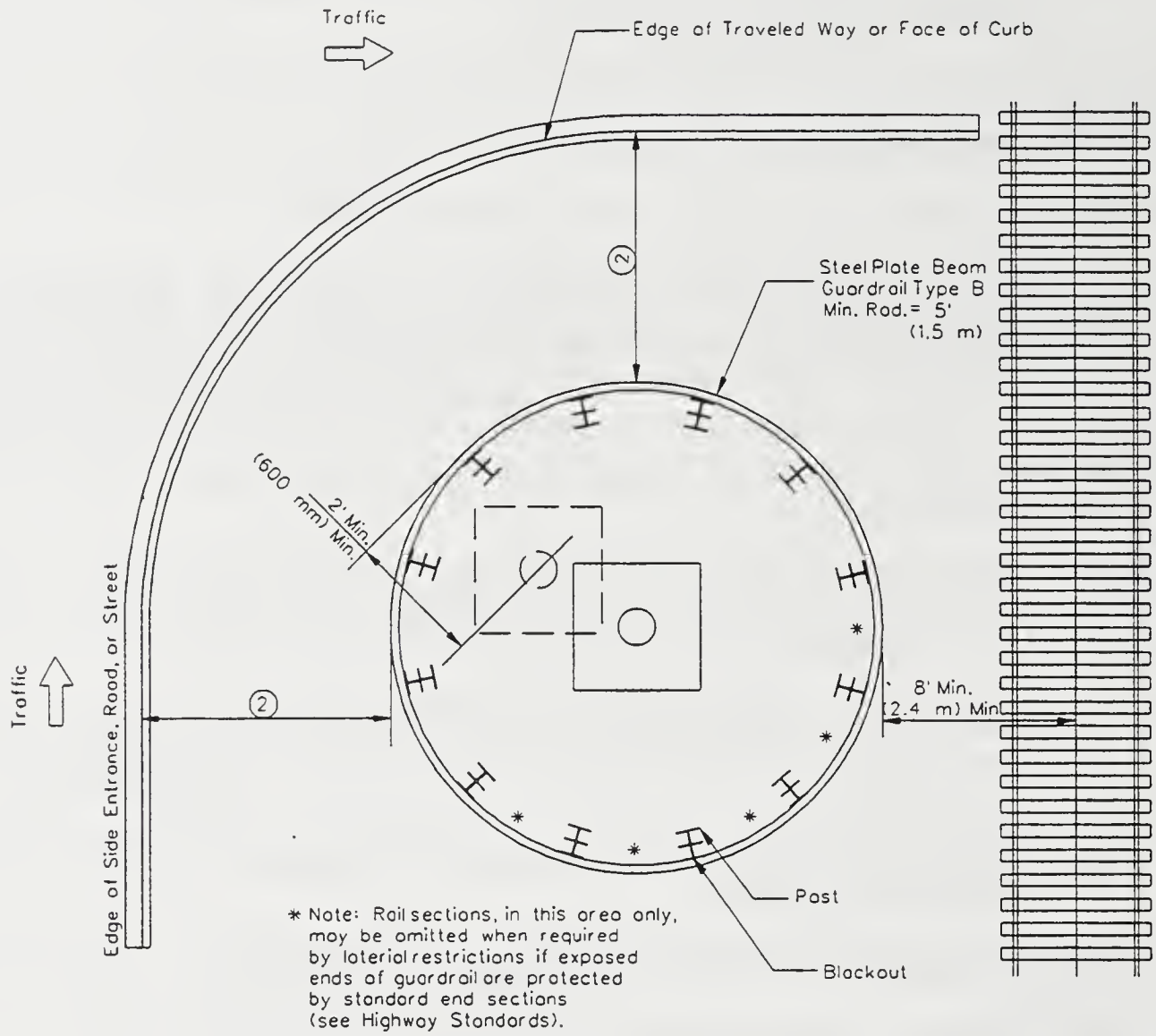
2. Installation. See Chapter 38 and the *Highway Standards* for the installation of guardrail at crossings.

3. Special Conditions. In industrial or other areas involving low-speed highway traffic and where warning devices are vulnerable to damage by turning truck traffic, ring-type guardrail may be installed to provide protection for warning devices. Ring-type guardrail should conform to Figures 7-3C and 7-3D. Substitute shielding devices, such as concrete, railroad ties or railroad rails, are not permitted.

4. Signals. Do not use breakaway or frangible bases for cantilever signal supports.

5. Maintenance of Barriers. The Department will maintain all longitudinal guardrail and impact attenuators. The Railroad will be responsible for maintaining the ring-type guardrail.

6. Approval. Approval for the erection of any roadside barrier by the Railroad must be obtained in writing from BDE.



NOTES:

1. All construction and material should conform to the latest editions of the IDOT *Highway Standards* and IDOT *Standard Specifications*.

2. Minimum offset determined by general conditions with 6 ft (1.8 m) and 2 ft (600 mm) desirable for rural and urban sections respectively. Offset the guardrail a minimum of 6 ft (1.8 m) where the roadway cross sections include flush shoulders. In no case shall guardrail encroach upon the shoulder.

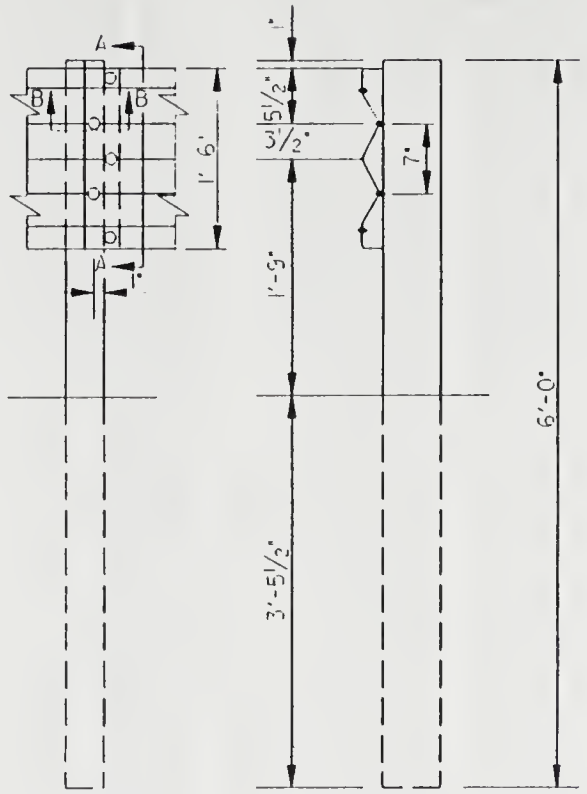
3. Guard ring may be off center of warning device when required by lateral restrictions.

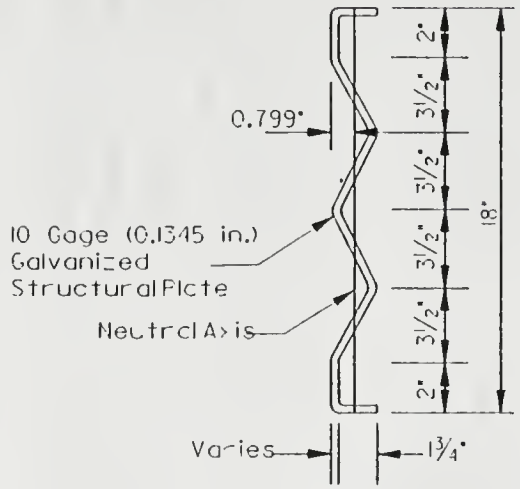
4. If either the size or the number of warning device foundations will preclude the use of a circular ring as shown, an appropriate amount of tangent guardrail may be included.

5. If, due to geometrics of the warning device location, it is not practical to provide a 5 ft (1.5-m) minimum radius guard ring, with minimum clearance, the alternative structural plate ring should be considered; see Figure 7-3D.

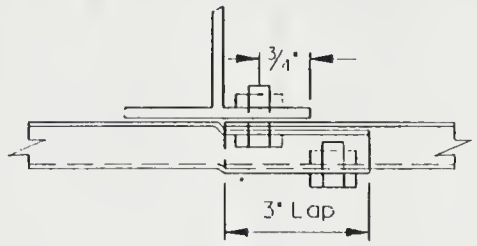
RAILROAD WARNING DEVICE GUARDRAIL
(For Roadways Up to 45 mph (70 km/h))

Figure 7-3C





SECTION A-A



SECTION B-B

Diameters and Plate Lengths					
Radius at Neutral Axis	Total No. Plates	Plate Lengths			No. Posts
		37¾"	44"	50¼"	
2'-0"	4	4	—	—	4
2'-3"	4	1	3	—	4
2'-6"	4	—	2	1	4
2'-9"	5	2	3	—	5
3'-0"	5	—	4	1	5
3'-3"	5	—	1	4	5
3'-6"	6	—	6	—	6
3'-9"	6	—	3	3	6
4'-0"	6	—	—	6	6
4'-3"	7	—	5	2	7
4'-6"	7	—	2	5	7
4'-9"	8	—	7	1	8

General Notes:

1. *All bolts have a 5/8″ diameter and length as required.*
2. *Galvanize all bolts and nuts according to the requirements of AASHTO M232.*
3. *All holes in posts are 3/4″ diameter.*
4. *The rail elements should conform to the material requirements and be galvanized according to AASHTO M180.*
5. *Structural Plate Guard Ring and posts will conform to the applicable portions of the* IDOT Standard Specifications *and* Highway Standards.
6. *The inch-pound units have been retained for use by Railroads.*

ALTERNATIVE STRUCTURAL PLATE GUARD RING
(For Radius, 5 ft (1.5 m))

Figure 7-3D

7-3.02(e) Approaches

When a grade crossing improvement is undertaken, that portion of the roadway lying within or adjacent to the crossing should, if necessary, be improved to provide a smooth approach to the crossing so that the driver's attention will not be diverted from warning devices or oncoming trains by rough approaches. Also, consider removing or relocating any obstructions to a motorist's view of warning devices within the roadway. This includes utility poles, shrubs, trees, signs, etc.

7-3.02(f) Design Considerations

When it has been determined that an at-grade crossing is appropriate at a highway-railroad intersection, the district will prepare a plan and profile sheet for the highway showing complete information for existing and proposed railroad facilities; see Section 7-2.02. These plans will be used by BDE for negotiating with the Railroad involved. When designing grade crossings, consider the following:

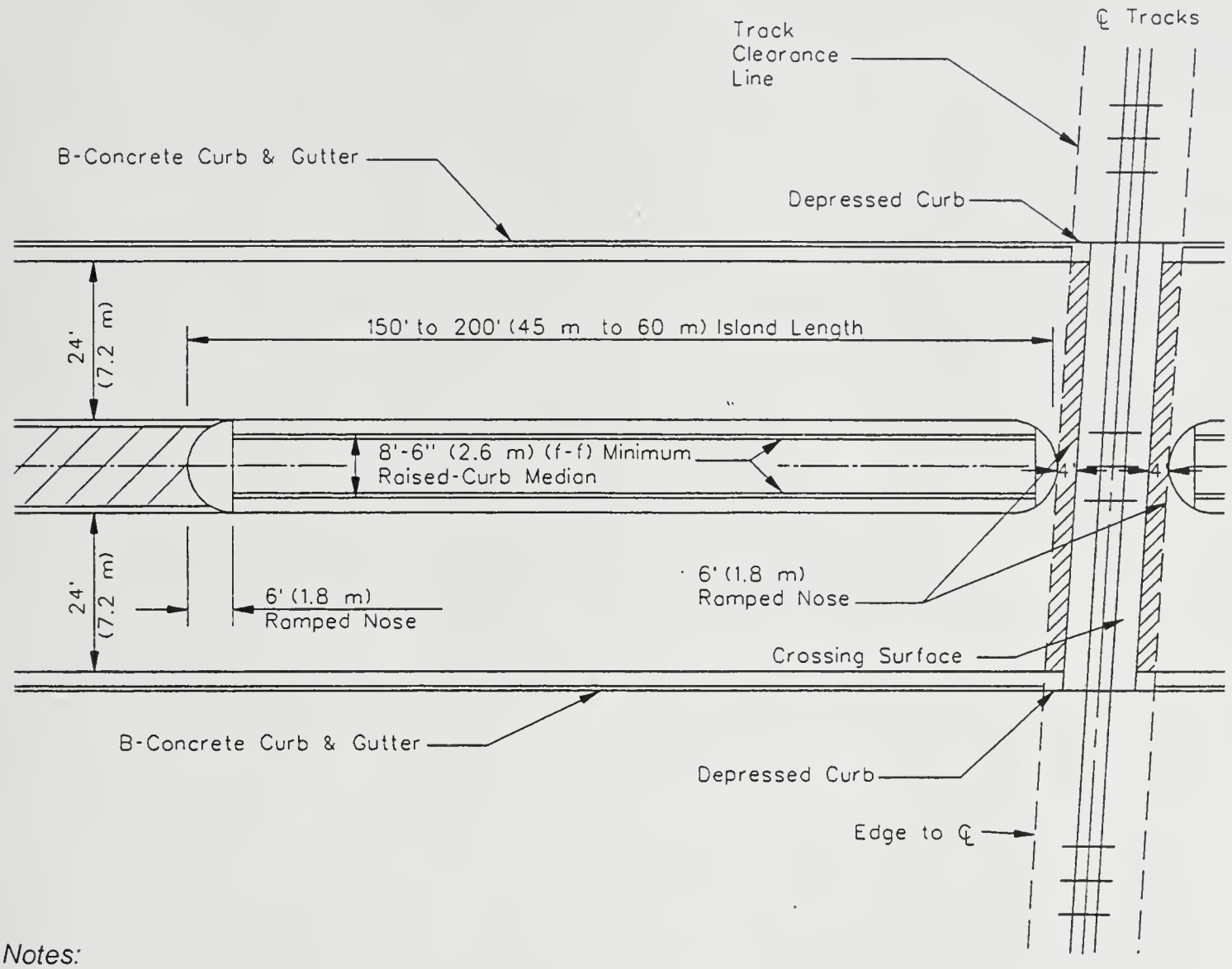
1. Grade Crossing Proper.

   a. Surface Material. Where the roadway traffic equals or exceeds 1000 ADT, use prefabricated rubber or concrete surface materials. For ADT less than 1000, timber and/or asphalt crossings may be used.

   b. Medians. Where median-mounted warning devices will be installed and other than an earth median is adjacent to a grade crossing, the median should have a barrier-type curb with a minimum median width of 8.5 ft (2.6 m) face-to-face of curb. Depress all medians and curbs on approaches to the crossing to the level of the pavement edge or gutter flag within the track clearance line which is parallel to and 8 ft (2.4 m) from the centerline of the nearest track; see Figure 7-3E.

   c. Location. Where no barrier curbs extend along the pavement, the crossing proper and islands between tracks should extend to parallel lines which are 8 ft (2.4 m) outside of the pavement edges or to edge of stabilized shoulder, whichever is greater. Where barrier curbs along the pavement are present, the crossing proper and islands should extend to the back of the curb except where the opening along the curb exceeds 55 ft (16.8 m), in which case the crossing should extend 3 ft (900 mm) outside the curb face.

   d. Sidewalks. Where sidewalks are present, also include a sidewalk crossing. Where sidewalks abut or are in close proximity to the back of curb, the district may elect to extend the prefabricated crossing materials to the outer limits of the sidewalk.



Notes:

1. *Where a raised-curb, flush, or traversable type median is used on the roadway, provide B-6 or B-9 (B-15 or B-22) raised-curb median adjacent to each side of the railroad track(s); see Section 34-2.04.*

2. *In addition to deterring vehicular movements over the track(s) in the median area, the raised-curb median provides a space for mounting railroad warning device units, if required. Also, see Section 36-8.*

3. *If the railroad tracks are located close to a cross street and lie within the left-turn lane of the intersection, this situation will require a special design and the use of barrier type curb along the median adjacent to the turn lane.*

TYPICAL MID-BLOCK MEDIAN TREATMENT ADJACENT TO RAILROAD CROSSINGS
(Multilane Urban and Suburban Highways)

Figure 7-3E

e. Pavement. Construct the approaches to grade crossings and the islands between the tracks according to the *Highway Standards*. This also applies where a Railroad constructs a crossing through an existing pavement.

f. Grades. Design the grades on approaches to grade crossings, as a minimum, according to the criteria in the *92 Illinois Administrative Code*, Chapter III, Subchapter C, Section 1535.204.

2. Grade Crossing Warning Devices. Ensure the design, installation, and operation of grade crossing warning devices conforms to the *Illinois Manual on Uniform Traffic Control Devices (ILMUTCD)* and *92 Illinois Administrative Code*, Chapter III, Subchapter C, Part 1535 as applicable.

Locate warning device units a minimum of 12 ft (3.6 m) from the centerline of near track and 4 ft 3 in (1.3 m) back of the face of curb or outside the edge of paved shoulder or 8 ft 3 in (2.5 m) outside the edge of traveled way. The 4 ft 3 in (1.3 m) and 8 ft 3 in (2.5 m) dimensions allow the clearances noted in the *ILMUTCD* in the event the railroad installs lamp units equipped with large backgrounds.

3. Sight Distance. The AASHTO *A Policy on Geometric Design of Highways and Streets* presents criteria to determine the applicable sight triangle at a highway-railroad crossing.

7-3.02(g) Signalized Intersections

Where a signalized highway intersection is located near a railroad grade crossing, ensure that there is sufficient storage distance between the highway intersection and railroad grade crossing to allow for the storage of stopped vehicles at the intersection. Where this is not practical, coordinate the traffic signal system with the railroad's approach circuitry to allow stopped traffic on or near the grade crossing to clear the crossing upon the approach of a train. Where the railroad crossing is signalized, interconnect the two signal systems. For guidance on the design and coordination of traffic signals near grade crossings, review the *ILMUTCD*, the ITE publication *Preemption of Traffic Signals At or Near Railroad Grade Crossings with Active Warning Devices*, Section 36-8, and Chapter 57.

All grade crossings requiring an interconnection must be coordinated with the Bureau of Operations. See the flowcharts in Figures 7-2A, 7-2B, and 7-2C for a general outline of the coordination process.

7-3.03 Grade-Separated Structures

7-3.03(a) Warrants

A grade separation should be provided where a highway is constructed or reconstructed across a railroad when the crash frequency for gates exceeds 0.02 and the benefit-cost ratio equals or exceeds 1.0.

A grade separation should be provided where an expressway in a rural area is constructed or reconstructed across the railroad.

7-3.03(b) Design Considerations

Where grade separation is warranted as determined by the criteria contained in Section 7-3.03(a), BDE will be responsible for the negotiations with the railroad involved to determine who will design the structure; see Section 7-2. Plans prepared by or for the Department must be approved by the Railroad and should show:

- the structural design features;
- the vertical clearance from top of rail to under clearance of superstructure;
- the distance between track centers for multiple-track crossing;
- the lateral clearance from track center to face of adjacent pier (or abutment);
- the distance to a designated railroad reference marker (i.e., mile post) from centerline of bridge;
- the flow line and cross section of existing and proposed drainage features, including drainage structures;
- the location and stationing of railroad right-of-way lines;
- the wire lines and utility facilities located on railroad right-of-way; and
- other pertinent features affecting the Railroad's interests.

For details of the geometric design, see the *Bureau of Bridges and Structures Manual*.

Section 7-1.06 addresses acquisition of the necessary railroad property for the structure. The contractor shall be responsible for temporary railroad crossings for use by the Contractor in accordance with Article 107.10 of the *Standard Specifications*.

7-3.04 Other Agency References

For uniformity, use the applicable Federal regulations on both Federally and non-Federally funded projects. Clearance and public safety aspects of all projects shall conform with the regulations of the Illinois Commerce Commission. Applicable publications of these agencies are provided in Figure 7-3F.

PUBLICATION	SUBJECT
**FPG*, Chapter 1, Subchapter B, Part 140, Subpart I	Reimbursement for Railroad Work
**FPG*, Chapter 1, Subchapter G, Part 646, Subpart B	Railroad-Highway Projects
**FPG*, Chapter 1, Subchapter G, Part 646, Subpart A	Railroad-Highway Insurance Protection
92 *Illinois Administrative Code*, Chapter III, Subchapter C, Part 1500	Minimum Clearances Applicable to Tracks, Structures, Fixtures, and Other Appurtenances of Railroads
92 *Illinois Administrative Code*, Chapter III, Subchapter C, Part 1535	Crossings of Rail Carriers and Highways
Illinois Supplement to the Manual on Uniform Traffic Control Devices	

**FPG* = FHWA *Federal-Aid Policy Guide*.

PERTINENT PUBLICATIONS OF OTHER AGENCIES
Figure 7-3F

Chapter Eight

CONSULTANT DEVELOPED AND/OR DESIGNED PROJECTS

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

Chapter Eight
CONSULTANT DEVELOPED AND/OR DESIGNED PROJECTS

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CHAPTER EIGHT
CONSULTANT DEVELOPED AND/OR DESIGNED PROJECTS

Chapter 8 documents the Department's policies and procedures to use when processing consultant developed and/or designed projects.

8-1 DEFINITIONS AND PROCEDURES

8-1.01 Definitions

The following definitions apply to Chapter 8:

1. Additional Services. Any service or action required of the Consultant not identified in the Agreement or any Supplemental Agreement.

2. Agreement. The legal instrument or negotiated contract defining the obligations and considerations of the signatory parties. The term "Agreement" includes all Supplemental Agreements.

3. Bureau Chief. The Department's officer named in the Agreement who shall approve any change or additional work authorization.

4. Consultant. The firm providing professional services as a party to the Agreement.

5. Department or IDOT. The Department of Transportation of the State of Illinois.

6. Department or IDOT Internet Site. http://www.dot.state.il.us.

7. Director. The director of the division or office of the Department who is in charge of the services under the Agreement.

8. District Engineer. The engineer in charge of the district which has jurisdiction over the services.

9. Fixed Fee. A specified dollar amount to cover profit and certain business expenses based on the assigned complexity factor (see Exhibit 2 in Section 8-6) of the project.

10. Liaison Managers. The duly authorized representatives of the Department and the Consultant charged with day-to-day administration of the terms of the Agreement.

11. Prequalification. A condition that shall be met before consideration is given.

12. Project Schedule. A comprehensive description of all significant services required of the Consultant and of all actions required of the Department and approving parties by the obligations of the Agreement, together with the durations and/or dates for performing these services and actions.

13. Scope of Services (Advertised). All services and actions required of the Consultant as advertised in the Professional Transportation Bulletin.

14. Scope of Services (Negotiated). All services and actions required of the Consultant by the obligations of the Agreement.

15. Subconsultant. Any independent professional firm, person, or organization who, with the approval of the Department, performs a part of the services for the Consultant.

16. Supplemental Agreement. An additional agreement modifying the original signed Agreement.

17. Service. All engineering and related services and the furnishing of all equipment, supplies, and materials required to achieve the broad purpose and general objectives of the Agreement.

8-1.02 Acronyms

The following are common terms used with consultant developed and/or designed projects:

1. AA. Affirmative Action.

2. A/E. Architectural-Engineering.

3. AFC. Annual Fee Capacity.

4. AU. Agreements Unit.

5. BAA. Bureau of Accounting and Auditing.

6. BDE. Bureau of Design and Environment.

7. CA. Certification Acceptance.

8. CAAS. Consultant Agreement Approval Sheet.

9. CECS. Cost Estimate of Consultant Services.

10. CEUF. Consultant's Employee Utilization Form.

11. CFR. Code of Federal Regulations.

12. COD. Contract Obligation Document.

13. CPFF. Cost Plus Fixed Fee.

14. CU. Consultant Unit.

15. DLM. Direct Labor Multiple.

16. EEO. Equal Employment Opportunity.

17. FHWA. Federal Highway Administration.

18. OMB. Office of Management and Budget.

19. OP&P. Office of Planning and Programming.

20. PSU. Project Support Unit.

21. PTB. Professional Transportation Bulletin.

22. QA/QC. Quality Assurance/Quality Control.

23. SAPCS. Standard Agreement Provisions for Consultant Services.

24. SEFC. Statement of Experience and Financial Condition.

25. TS&L. Type, Size, and Location Plan.

8-2 PREQUALIFICATION AND SELECTION

8-2.01 Use of Consulting Engineering Firms

Extensive engineering activity is required to complete the Transportation Improvement Program (e.g., performing necessary studies, preparing construction plans and specifications for advertising construction projects, and inspecting construction activities). To accomplish the Program without appreciably increasing the number of IDOT personnel or performing services for which the Department does not have specialized expertise, the Department uses outside consulting engineering firms.

8-2.02 Prequalification of Consultants

All Architectural-Engineering (A/E) Consultants desiring to provide services to the Department, whether as prime or subconsultant, are prequalified before any consideration is given to their respective Statements of Interest (see Section 8-2.04(a)). Prequalification must be obtained no later than the final date established for the receipt of Statements of Interest for any particular work. However, a Consultant that is prequalified for one or more types of work on the final date established for the receipt of Statements of Interest may submit supplemental information as necessary to establish prequalification for additional types of work. This supplemental information must be received no later than three working days prior to the Consultant Selection Committee meeting (see Section 8-2.05(a)). The following items discuss the prequalification procedures:

1. SEFC Filing. A properly completed Statement of Experience and Financial Condition (SEFC) form with required attachments must be filed with the Division of Highways, Bureau of Design and Environment, Consultant Unit (CU); see IDOT's internet site. Because of varying workloads, the Department cannot guarantee that a SEFC will be processed by a particular date. Therefore, any Consultant desiring prequalification for a particular project should file its SEFC as early as possible.

2. Prequalification Notification. The BDE analyzes the SEFC and attachments and notifies the Consultant of the size and types of services it is qualified to perform. When this notice is given, the Consultant is prequalified. The size of service that a Consultant is qualified to perform is based on its annual fee capacity.

3. Annual Fee Capacity. A Consultant's annual fee capacity is an evaluation of its technical and professional staff's ability to generate an annual volume of work. To estimate the maximum annual fee capacity of a Consultant to perform transportation or architectural work, the larger of the fees computed by the following two methods is used:

    - the fee produced by multiplying the total number of technical staff by $100,000, or

- the fee produced by multiplying the total number of professional staff by $400,000.

To determine the annual fee capacity of Consultants performing aerial mapping services only, the figure of $360,000 per plotter is considered appropriate. The following presents general application guidelines:

a. Determining Performance Ability. To determine a Consultant's ability to perform a project, the total uncompleted volume of transportation-related work is subtracted from the annual fee capacity, as determined above, to arrive at an unobligated fee capacity. Appropriate consideration is given to instances where a Consultant's uncompleted work is expected to extend over a period of more than one year. To be eligible for consideration, such unobligated fee capacity shall equal or exceed the estimated annual fee of the project for which the Consultant is seeking to perform.

b. Determining Staff Sufficiency. To determine whether a Consultant is sufficiently staffed to do a construction supervision project, the estimated overall fee for the project is reduced by one-half for the comparison to account for the Consultant possibly adding to its staff for this type of work.

4. Period of Effectiveness. The prequalification notice provided in Item 2 above will be effective, unless otherwise changed by the Department, from the time notice is given until six months after the end of the Consultant's current fiscal year. At that time, the prequalification automatically expires and the Consultant's Statement of Interest cannot be considered until prequalification is re-established. To avoid expiration of its prequalification, a Consultant updates and submits the Corporate and Financial Information section of the SEFC as early as practical after the end of each of their fiscal years. In addition, Consultants whose firm name begins with A-H should submit the remainder of the SEFC (i.e., the Experience and Staffing Information section) in even years (e.g., 2002, 2004, etc.). Consultants whose firm name begins with I-Z should submit the remainder of the SEFC in odd years (e.g., 2003, 2005, etc).

5. Changes Within the Consulting Firm. Each Consultant notifies the Department within 15 working days of key personnel changes that would cause the Consultant to lose its prequalification in any category.

6. Evaluation and Prequalification Status. A Consultant may be removed from the list of prequalified firms for a particular type of service if a final evaluation of its work for the Department indicates that this service was determined to be poor on a single project or substandard on two or moee projects. For specific information on consultant evaluations, see Section 8-4.05. The Consultant is reinstated only after submitting sufficient evidence that these deficiencies have been corrected.

7. Prequalification Inquiries. All inquiries regarding the procedures or information required for prequalification are referred to the BDE.

8. Confidentiality of Information. The Department will maintain and treat all information required under this section as confidential for use only by the Department or other governmental agency entitled by law or agreement.

9. Categories of Service. The Department prequalifies A/E Consultants in the categories of service. A description of the work involved in the areas of specialization and the minimum requirements are included. This information is available on the Department's internet site.

10. Professional Licensing and Registration. If the minimum requirements dictate Illinois licensing or registration, that individual shall be a full-time employee who has acted in a leadership role on relevant projects. Consultants, committing or pledging individuals, or persons on retainer cannot be used to meet the minimum requirements for prequalification, except as under Section D — Environmental Reports. See Description and Minimum Requirements for Prequalification on IDOT's internet site. The experience of these licensed or registered individuals shall be relevant to the category of transportation work and the work shall have been performed within the last five years. For the category of Structures, the last ten years of experience will be considered. See IDOT's internet site Description and Minimum Requirements for Prequalification, under Section A Items 3b, 3c, and 3d.

11. Support Staff Experience and Training. Consultants also shall have a support staff of engineers and/or technicians with relevant experience or training. The lack of relevant experience or training of the support staff may result in denial of prequalification.

12. Required Documentation. Consultants requesting prequalification in any area of specialization will be required to send documentation of their previous work outlining:

- firm and key employee pertinent experience, and
- capabilities of current staff.

The Department may, at its discretion, make on-site visits to the Consultant's office to verify the information set forth in the SEFC document submitted.

8-2.03 Request for Consultant Services

Use the following general guidelines when requesting consultant services:

1. Consultant Need Determination. A district or bureau requiring A/E services submits detailed information to its director concerning the need and scope of work required. The director will review the request to ensure that:

- the project is contained in the Department's program,
- the project is appropriate in scope, and
- the work cannot be performed by another district or bureau.

2. Project Selection Proceedings. The director, when satisfied that the A/E services are necessary and appropriate, initiates selection proceedings. The Consultant Unit (CU) requests divisions, districts, and bureaus submit candidate projects approximately four weeks prior to publishing a Professional Transportation Bulletin (PTB).

3. Preparation of Form A/A-1. Use Form A/A-1, see IDOT/MS Word "Forms" button, to justify requests for A/E firms to perform engineering services. Use the following guidelines when preparing Form A/A-1:

   a. Transmittal Memorandum. Prepare a transmittal memorandum to accompany Form A/A-1 that lists, in priority order, all projects being submitted and indicate recommendations for combining two or more program line items into one consultant developed and/or designed project.

   b. Multi-Part Candidates. Prepare a separate Form A/A-1 for each part of a multi-part candidate. These are small jobs, usually located in close proximity to each other, that the Department advertises as a single project (e.g., three rural bridges located on the same route).

      A detailed cost estimate is prepared by the submitting district or bureau ensuring adequate funds are programmed for the advertised project. Where insufficient funds are programmed, the district or bureau works with OP&P to secure the necessary funds.

   c. Proposed Project Advertisements. In conjunction with Form A/A-1, the requesting district or bureau submits a proposed advertisement for the PTB. The project can be advertised after approval by the division or office director. The description is prepared in the PTB format and sent to the CU for review, coordination, final preparation, and issuance. Use the PTB guidelines and the sample advertisements, provided in Exhibit 1 in Section 8-6, when preparing highway project advertisements. Exhibit 1 also may be used to prepare advertisements for other transportation modes.

   d. Urgent Consultant Need. If a requesting agency determines that the selection of a Consultant is urgent and special advertisement is required, furnish justification for this action to the appropriate director with the original Form A/A-1.

4. Dissemination of Materials. After all divisions and districts have submitted Forms A/A-1 and advertisements to the CU, the information is distributed to the following individuals for comment:

- Deputy Director of Program Development,
- All affected Division of Highway bureau chiefs,
- Director of the Office of Planning and Programming,
- Bureau Chief of Statewide Program Planning, and
- Section Chief of Program Management.

5. PTB Advertisement Meeting. Comments on the distributed materials are collected and are presented along with short project descriptions at a meeting held with the following individuals:

   - Deputy Director of Program Development,
   - Bureau Chief of Statewide Program Planning,
   - Section Chief of Program Management,
   - Section Chief of Preliminary Engineering, and
   - Unit Chief of the Consultant Unit.

The outcome of this meeting is a final list of projects advertised in the next PTB. If any projects are dropped from the list to be advertised, the director, district engineer or bureau chief is informed of the reason(s) for not advertising the projects.

8-2.04 Advertisement of Need

Official notice of the need for architectural or engineering services being procured by the Department is published in an IDOT Professional Transportation Bulletin (PTB). Such notice describes the requirements of each project as they apply to:

- the project's scope of work;
- the time for completion;
- the necessary professional and technical expertise; and
- the required proximity of the Consultant to the district or bureau in charge of the work, if applicable.

A copy of the PTB is available for downloading from the Department's internet site.

8-2.04(a) Statements of Interest

All Consultants desiring to be considered as a prime Consultant for a project submit a Statement of Interest by the date and to the locations specified in the PTB. The PTB specifies

the types of information included in the Statement of Interest. This information includes, but is not confined to the following:

- a staffing plan that designates the key personnel and shows the number and classification of personnel that will be assigned to the project, along with their current office location, and any work that the Consultant proposes to subcontract;
- estimated time requirements for completion using the proposed staff;
- the known work load of the Consultant's transportation staff; and
- the existing office where the majority of the work will be performed.

8-2.04(b) Confirmation of Eligibility

The Department determines the eligibility of each Consultant that responds to a project advertisement. A Consultant is considered ineligible from the selection process for any of the following reasons:

- the Statement of Interest was not received by the deadline or by the specified parties;
- the firm is not prequalified for the type(s) or volume of services required;
- the firm does not have sufficient expertise or work force for the particular job;
- the firm does not have a sufficient financial rating or accounting system for the type of contract contemplated; or
- when the Consultant is retained to prepare construction plans for a facility, which will carry railroad traffic, the owning railroad determines that the particular Consultant is unacceptable.

Any Consultant determined to be ineligible under this section is notified of such determination and the reason(s) therefore.

8-2.04(c) Preliminary Review and Ranking

Following the confirmation of each Consultant's eligibility, the director of the requesting division or office, or the director's designated representative(s), reviews each firm's experience data, Statement of Interest, and any evaluations of previous work for the Department. Based upon this review, each candidate firm is ranked in order of apparent ability to perform the work. This review and ranking will take into consideration at least the following factors:

- previous experience in the type(s) of service required;
- the staffing plan and specific expertise of key employees;
- the plan for accomplishing the objectives, if applicable, as stated in the requirements of the PTB;
- the Department's evaluations of prior contractual services with IDOT, if any; and
- comments furnished by the requesting division or office.

Depending upon the type of project and the method of payment, the following factors also may be important in selecting a Consultant:

- the location of the Consultant's office in which the majority of the work on the project will be performed; and
- the Consultant's total overhead rate, as approved in the Department's Prequalification Notice.

The Consultant Selection Committee (CSC) reviews information including the ranking of each Consultant and the additional information described above. The information also indicates those Consultants determined to be women or disadvantaged business enterprises in accordance with the Department's eligibility criteria.

The CSC determines the projects which, by their nature and the corresponding qualifications of the proposing minority-owned firms, are suitable for implementing in an applicable affirmative action program. Any unresolved differences between the reviewers will be brought to the attention of the CSC.

All information developed or provided under this section is advisory only and has no binding effect upon the CSC. The Department maintains and treats all such information as confidential for use only by the Department or other governmental agency entitled by law or agreement.

8-2.05 Consultant Selection

8-2.05(a) Consultant Selection Committee

The Consultant Selection Committee (CSC) consists of the following members:

1. Chairperson. The Director of Highways, or such other person as designated by the Secretary, serves as member and chairperson of a six-member CSC.

2. Department Members. Three of the remaining five members of the CSC are from the Department. Specifically, they are:

   - the director of the requesting division or office or that director's designee, for the Division of Highways this is the Deputy Director of Program Development;
   - the District Engineer, or designee, or the bureau chief, or designee, from the same division or office, as designated by the director; and
   - the Director of the Office of Planning and Programming, or designee.

   The Chief of the Consultant Unit serves as Secretary of the CSC and does not have the power to vote.

   In the event that the office requesting the services is the Office of Planning and Programming, the CSC meets and operates as normal except the Director of Planning and Programming has only one vote and the CSC has only five members and five votes.

3. Public Members. The other two members of the CSC are from the public and have professional experience in transportation or engineering. One is appointed by the Secretary of Transportation and the other by the Illinois Society of Professional Engineers (ISPE). Each public member is appointed for a term of two years. If a public member does not complete the term, another member is appointed by the Secretary or the ISPE, in accordance with the original appointment, to serve the remainder of the uncompleted term.

The CSC will meet when called by its Chairperson. This meeting is usually scheduled approximately 7-8 weeks after the consultant Statement of Interests are due. The selection date is stipulated in the Professional Transportation Bulletin.

To conduct business, the CSC shall have a quorum. A quorum will consist of at least four members; at least one of who is a public member.

Where another governmental body, or bodies, is contributing to the funding of a particular contract, the Department may, at its option, take either of the following two actions:

- Permit such governmental body, or bodies, to provide one or more representatives to serve as member(s) of the CSC with a total of one vote, or such fractional vote as may be prescribed by the Department. In some instances, this option may result in a total CSC membership of more than six and a total number of votes in excess of six, with respect to the affected services.
- Select a number of Consultants, typically three, in the typical manner, except such selection will be with no order of preference; the Department then may permit the

governmental body, or bodies, to select one Consultant from that group selected by the CSC.

8-2.05(b) Selection Procedures

The following procedures are used when selecting the Consultant:

1. Preliminary Vote. CSC members review the rankings for the Consultants, as well as any of the additional information described in Section 8-2.04(c) and, by voice/electronic vote, reduce the number of Consultants under consideration to three, or fewer where fewer than three have submitted acceptable Statements of Interest.

2. Written/Electronic Ballot. First, second, and third choices are determined by a plurality vote of those CSC members in attendance. This second round of voting is by written/electronic ballot. In determining these choices, the CSC gives due consideration to the rankings provided by the reviewers.

3. Policy Against Multiple Awards. Selection of a single Consultant as first choice for more than one project is not made in a single session unless such selection is determined necessary, the reasons therefore are recorded in the CSC's records, and a majority of the committee members approve, by written ballot, such reasons. For purposes of this part, "single session" means and includes one or more meetings necessary for the CSC to make all selections from a single Professional Transportation Bulletin.

4. Identity of Firms. The identity of the second and third choice is maintained and treated by the Department as confidential for use only by the Department or other governmental agency entitled by law or agreement. However, if negotiations fail with the first choice Consultant, the identity of the second choice Consultant then is considered public information. Similarly, if negotiations fail with the second choice Consultant, the identity of the third choice Consultant is considered public information.

5. Notification of Selection. Selected Consultants are notified by telephone or e-mail of the following information:

   - PTB and item number of selection;
   - date and time of negotiation meeting;
   - DBE requirements, if applicable;
   - complexity factor, see Exhibit 2 in Section 8-6; and

- request for current payroll by employee, classification, hourly rate, raise schedule, and any direct costs for their firm and any proposed subconsultants.

An announcement of selected Consultants will be available from the Department's internet site and e-mailed to all prequalified consultants the day after selection.

8-3 AGREEMENT NEGOTIATION AND PROCESSING

8-3.01 General

The director or that director's representative initiates negotiations with the selected Consultant. For district requested projects, the District Engineer, or his/her representative, initiates negotiations. If a successful conclusion cannot be obtained, negotiations are formally terminated with that Consultant. Negotiations with the second choice Consultant are then initiated. Similarly, if negotiations fail with the second choice Consultant, negotiations with the third Consultant are initiated. Prior to the second choice consultant being contacted, the director's concurrence is required.

The term "negotiation" includes all of the steps necessary, following the selection of a Consultant, to arrive at a signed Agreement and to authorize the work. This includes negotiation meetings to reach agreement on:

- scope of work,
- man-hours,
- schedule of completion,
- subcontracted work, and
- non-salary direct costs.

Negotiations also include:

- reaching agreement on the acceptable average payroll rates for the project;
- approving the detailed fee estimate and proposal from the Consultant and obtaining authorization from the Federal Highway Administration when Federal participation is anticipated;
- obtaining the Bureau of Accounting and Auditing's approval of the Consultant's and any proposed subconsultant's payroll and direct cost rates;
- obtaining signatures to the Agreement; and
- authorizing the work.

8-3.02 Scope

8-3.02(a) Scope of Services Meeting

The scope of services meeting is the first step in the process leading to the execution of an Agreement and authorization to proceed with the work. For simple and typical projects, the

scope of services can be determined in one meeting whereas more complex jobs may require multiple meetings to delineate the scope of work. The initial scope of services meeting is specified in the project advertisement in the Professional Transportation Bulletin.

The representative of the district, or other user agency, chairs the meeting, records attendance, distributes data, and informs the Consultant to keep minutes of the meeting and furnish the minutes to those in attendance. The chairperson furnishes the Consultant and Subconsultants with the following items:

- Standard Agreement Provisions for Consultant Services (SAPCS), see IDOT's internet site;

- Architectural and Engineering Report and Negotiation Guidelines for Engineering Agreements and Supplements, see BDE Procedure Memorandum 17-xx; and

- Quality Assurance/Quality Control Guidelines, see BDE Procedure Memorandum 16-xx.

The district or bureau is responsible for preparing and emailing the scope of work and schedule to the Agreements Unit Chief in BDE.

The chairperson answers questions about the SAPCS and discusses Equal Employment Opportunity and Affirmative Action Plan requirements. The Consultant is asked to review the Architectural and Engineering Report and Negotiation Guidelines for Engineering Agreements and Supplements and to be prepared to answer the questions in the report.

Final scope details may be completed in subsequent negotiation meetings.

The Department's representative explains in detail the method of reimbursement. The chairperson also informs the Consultant if a Start-up Agreement will be requested from the central office and/or if this project will be under "no" review or "limited" review by the Department. The Consultant is instructed to review all the material furnished at the scope of services meeting and prepare man-hours, average hourly rates, and direct non-salary costs for the project. Subsequently, the Consultant submits, on Department forms or facsimiles, the Cost Estimate of Consultant Services (CECS), Average Hourly Payroll Rates, and an itemized listing of non-salary direct costs. The district representative urges the Consultant, if he/she has not previously done so, to submit to BDE their and any Subconsultants' payroll rates and direct costs to facilitate the agreement process. The Consultant also includes in its submittal those same items for all Subconsultants that are to be used on the project.

8-3.02(b) Scope of Work

A well-defined scope of services facilitates the negotiation process. The better the understanding of the scope of services between the Consultant and the Department, the easier

it is to develop a fee that is acceptable and reasonable to both parties. It is vital that all parties become familiar with the project. To this end, a preliminary engineering information package containing all the pertinent project information is mailed overnight by the district to the selected Consultant immediately after selection notification, allowing the Consultant and the Subconsultants to be active participants during this phase. The final negotiated scope, by law, must fall within the advertised scope for the project. However the negotiated scope does not need to be as all-inclusive as the advertised scope.

The overall scope of work is described and the schedule of completion is discussed, on which general agreement is reached for these items. The Consultant is notified if the work will proceed using "no" review or "limited" review process. The Consultant is reminded of the Department's policy concerning Quality Assurance/Quality Control (QA/QC), is asked to submit a project specific QA/QC plan for review and approval, and to include specific hours for QA/QC in his/her proposal. Also included in the Consultant package for Phase II work are specified hours for consultation during Phase III of the project. The Consultant is furnished preliminary information pertinent to the work, such as:

- Phase I study reports,
- environmental documents,
- aerial photography,
- mapping studies,
- traffic data,
- survey data,
- old plans, and
- samples of final product format.

8-3.03 Methods of Compensation

The following are the methods of compensation used by the Department:

- direct labor multiple (DLM);
- cost plus fixed fee (CPFF);
- lump sum, only used when supplementing an existing lump sum prime agreement;
- variable lump sum, only used when supplementing an existing variable lump sum prime agreement;
- unit of work; and
- specific hourly rates.

The contract shall specify a maximum amount payable for direct labor, for direct costs, and a total contract amount, none of which shall be exceeded unless adjusted by a contract modification. The method of compensation for work by a Subconsultant is the same as the Prime Consultant's method of compensation, except for work listed under Cost Plus Fixed Fee (CPFF) below.

8-3.03(a) Direct Labor Multiple (DLM)

This method of payment compensates the Consultant for actual direct costs incurred plus a specified multiplier on the actual direct payroll used for the project. Thus eliminating the need for auditing of Consultants' overhead and fringe benefits (oh & fb). Use this method on all projects funded with State funds except as noted under Cost Plus Fixed Fee. The Consultant is encouraged to be innovative and efficient in completing the terms of the contract. To this end, an efficiency factor (See Section 8-4.06(b)) of 50% is applied to the difference between the direct labor with the multiplier in the contract (negotiated direct labor) and the actual direct labor with the multiplier. The multiplier for Phase I and Phase II type work is 3.0 and for Phase III, construction engineering the multiplier is 2.8. These multipliers are adjusted based upon the complexity factor R (see Exhibit 2 in Section 8-6) for the project.

8-3.03(b) Cost Plus Fixed Fee (CPFF)

This method of payment compensates the Consultant for actual payroll, oh & fb, and direct costs plus a fixed fee. Use this method of payment on work involving aerial mapping, geotechnical engineering, special waste, and asbestos abatement. On these types of work, advertised as CPFF, the Consultant may request to use the DLM method of compensation. Use this method of payment on all projects using Federal funding. The efficiency factor is also applied to CPFF contracts. This is the negotiated direct labor minus actual labor plus overhead.

8-3.03(c) Lump Sum

This method of payment compensates the Consultant for negotiated payroll, oh & fb, direct costs, and a fixed fee. Use the lump-sum method of payment for work when supplementing an existing contract where lump sum is the method of compensation.

8-3.03(d) Variable Lump Sum

This method of payment is similar to the lump-sum method except that all components of the costs are fixed except for the oh & fb rate. A provisional oh & fb rate is used to establish the variable lump sum. The oh & fb element is adjusted after the project is completed using a weighted average oh & fb rate based on actual audited oh & fb rates experienced by the

Consultant over the life of the project. Use the variable lump-sum method of payment when supplementing an existing contract where lump sum is the method of compensation.

8-3.03(e) Unit of Work

Unit of work involves compensating the Consultant in units such as "each" or "feet." Rates are established in the Agreement and include all costs including profit. The unit-of-work method of payment often is used for geotechnical, thermographic, ground penetrating radar, and special waste contracts.

8-3.03(f) Specific Hourly Rates

Specific hourly rates include salary, oh & fb, and a fixed fee. The rates are established by payroll classification and will be listed in the Agreement. The oh & fb component will be either fixed or variable as specified in the Agreement. The specific hourly rates are used to compensate for additional work on lump sum and variable lump-sum contracts. Specific hourly rates also are used in work order contracts to establish the upper limit of compensation for each work order.

8-3.04 Negotiations

The negotiation meeting is one of the most important steps to the success of the project. It is vital that all parties become familiar with the project and come prepared to participate in the meeting. The project team for both the Department and the Consultant, including Subconsultants, should be active participants in this phase.

The end result of the negotiation process should be a well thought out and clearly documented understanding of the anticipated project scope and level of effort. The Department and the Consultant's representatives (i.e., individuals with the authority to modify original man-hour estimates) will negotiate to clarify the extent of the effort involved in completing various work tasks. To be successful, it is essential that the Department's representatives prepare an independent man-hour estimate prior to advertising the project and provide to the Consultant immediately after notification of selection the "Consultant Scoping and Negotiation Check Sheets" for the project.
The negotiations should culminate with agreement on the following items:

- scope of work,
- project schedule,
- man-hours required,
- average hourly rates,
- direct costs,

- QA/QC plan,
- QA/QC hours specified,
- Phase III hours in Phase II projects, and
- each of the above items for any Subconsultants.

8-3.05 Cost Proposal Packages

After negotiations have been completed, the Consultant will submit the proposal to the district/bureau. Instructions and forms for preparing the proposal are available on the Department's internet site. The district/bureau will verify that the proposal is consistent with the negotiations, BDE Procedure Memorandum 17-xx is completely filled out, the proper CECS forms were used, and then submit the proper number of copies to the Agreements Unit for further processing. The proposal package contains the following items for the appropriate type of project:

1. Prime Agreement Proposal Package. This will consist of the following:

    - District's Independent Man-hour & Direct Cost Estimate,* separate from the A/A-1 form;
    - Draft Scope of Work With Schedule (Bar Chart)*;
    - BDE Procedure Memorandum 17-xx;
    - Negotiation Meeting Minutes;
    - Cost Estimate Of Consulting Services (CECS), including QA/QC and Phase III hours/costs broken out;
    - Average Hourly Rates (Item/Overall);
    - Approved QA/QC Plan;
    - Consultant Employee Utilization Form (EEO 1981);
    - EEO/AA/Title VI Section Form (BDE 2350);
    - Direct Costs;
    - Consultant Agreement Approval Sheet*, if applicable; and
    - Consultant Scoping and Negotiation Check Sheets;

* E-mailed to the Agreements Unit Chief in the Bureau of Design and Environment.

2. Sub-Consultant Agreement Package. This will include the following:

- Draft Sub-Consultant Agreement **,
- Cost Estimate Of Consulting Services (CECS),
- Average Hourly Rates (Item/Overall),
- Approved QA/QC Plan,
- Consultant Employee Utilization Form (EEO 1981),
- EEO/AA/Title VI Section Form (BDE 2350), and
- Direct Costs.

**Approved Subconsultant agreement must be received within 30 days of the Prime Consultants' authorization to proceed.

3. Various/Various Prime Agreement Package. This will include the following:

- Draft Scope of Work,
- BDE Procedure Memorandum 17-xx,
- Negotiation Meeting Minutes,
- Approved QA/QC Plan,
- Consultant Employee Utilization Form (EEO 1981),
- EEO/AA/Title VI Section Form (BDE 2350), and
- Direct Costs.

Three copies of the completed proposal package should be submitted.

The appropriate areas in the central office are transmitted copies by the Bureau of Design and Environment. The district/bureau memorandum transmitting the proposal packages to the Agreements Unit shall clearly state concurrence and recommendations. For Prime Agreements that exceed the estimated fee by more than 10%, the transmittal package includes a Consultant Agreement Approval Sheet (CAAS) stating reasons for the cost overrun with costs and man-hours for each reason. The transmittal package for all Agreements over 10% of the estimated fee presented to the Selection Committee include the CAAS stating what is involved, why it is being added, the cost for each item involved, and why the Consultant is entitled to additional compensation.

8-3.06 Agreement Processing

Upon receipt of the proposal package from the district/bureau, the following steps are taken:

- Send all rates and/or direct costs not previous received to the Bureau of Accounting and Auditing (BAA) for review.

- The program numbers are verified through the Office of Planning and Programming (OP&P).

- Federal authorization is requested from the Program Support Unit of the BDE for jobs that will be Federally funded.

- Extensions and escalations are completed using the Audit report from BAA.

- Send the Preliminary Engineering Approval Record (PEAR) sheet, which contains the scope of work, man-hours and schedule, to the appropriate areas within the central office for concurrence, if applicable.

- Assure QA/QC hours of all projects and Phase III hours in a Phase II contract are broken out separately.

- Assure the Consultant disclosure information and insurance requirements are current, complete, and approved;

The Agreements Unit reviews and makes any needed modifications to the Agreement after receiving input from BAA and other interested offices of the Department.

The Agreements Unit resolves any audit findings in the BAA report. This may involve discussion with the district/bureau, Consultant, and the BAA. After all audit issues, scoping issues, and extension and escalation issues have been mutually resolved, the Agreement will be sent to the Consultant for signature. The Consultant reviews the Agreement, signs the Agreement but does not date the Agreement, and returns all copies to BDE. BDE obtains the appropriate signature(s) on behalf of the Department on the Agreement and the Agreement Managers verbally authorize the Consultant to proceed with the work. The district/bureau will be informed that the Consultant was authorized to proceed. A fully executed copy is sent to the Consultant and an original copy is placed on file in BDE. The district/bureau will receive a copy of the Agreement and an approved Contract Obligation Document. Work done prior to authorization to proceed is not eligible for reimbursement.

8-3.07 Funding Approvals and Federal Authorizations

The procurement procedures as described in this Section will be used for all A/E Consultant Agreements except for those applications for major architectural services. Major architectural services are currently provided through the Capital Development Board.

Upon receipt of a proposal package from the district/bureau, the Agreements Unit requests verification of the program code number and the type of funds (State or Federal).

When Federal funds are to be used, the Agreement Manager requests the Program Support Unit (PSU) in the BDE obtain Federal authorization. The PSU requests FHWA's authority to proceed with the work. Once authorization is received, a copy of this request and the FHWA authorization furnished by the PSU is included in the project file. Work done prior to FHWA authorization is not eligible for Federal participation.

Compliance with all aspects of 23 CFR Part 172 and OMB Circular No. A-102 is required and shall be documented. Lead-time of three weeks is estimated for obtaining FHWA authority to proceed, provided the district/bureau has submitted prerequisite programming material (OMB Standard Form 424).

8-3.08 Bureau of Accounting and Auditing Approvals

When the selected Consultant is notified of their selection, current payroll by employee and classifications, hourly rates, raise schedule, and any direct costs are requested from the Consultant. These are sent to BDE within 10 days after of the selection. Upon receipt of this information from the Consultant, the Agreements Unit sends a copy to the Bureau of Accounting and Auditing (BAA) for a pre-award audit. Upon receipt of the proposal package from the district/bureau, the BAA receives any rates not previously submitted to BDE or rates, which differ from those originally, submitted by the Consultant. The BAA will issue an audit report on the rates received to BDE. Then the escalations and extensions are completed. The Agreement Manager discusses any differences with the escalations and extensions, or the audit recommendations, as necessary, with the Consultant, district/bureau, and the BAA until consensus is reached.

Delays in sending wage rates and direct costs to BDE results in a delay in processing the agreement.

After the Agreement is executed, a Contract Obligation Document (COD) form is prepared by the Agreements Unit and submitted to the BAA for approval. A copy of the Agreement is attached to the COD form for BAA submittal to the State Comptroller. Funds, by law, shall be obligated and the Agreement filed with the State Comptroller within 30 days of the date of the agreement.

If the 30-day deadline is not met, a late filing affidavit must be completed by BDE.

On projects using bond funds, the funds shall be released by the Bureau of the Budget. A request memorandum is prepared by the PSU listing such projects. The PSU then notifies the Agreements Unit when the bond funds are released.

The BAA is also responsible for performing a final audit on completed projects. The administering district/bureau should request that the appropriate audit be made at the time the Consultant's final invoice is submitted for payment.

8-3.09 Authority to Proceed

8-3.09(a) Letter of Authorization

A Letter of Authorization, signed by the appropriate central office bureau chief, or designee, is sent to the Consultant by BDE. A "bluebacked" original of the fully executed Agreement is attached. Copies of the Letter of Authorization are sent to the administering district/bureau and the BDE file with:

- the Agreement;
- an approved COD form, transmitted separately; and
- the FHWA authorization, if Federal funds are utilized.

No payments are to be made to the Consultant until proper Certificates of Insurance are received by BDE.

Prior to issuance of the Letter of Authorization, the Agreements Unit reviews the entire file and ensures that all required clearances for authorization (e.g., by the FHWA, Bureau of the Budget (bond funds), design approval or risk management approval, notification of the administering district/bureau) have been obtained.

8-3.09(b) Risk Management

Authorization to proceed for projects including contract plans is possible without design approval if risk management is approved by BDE. For a project to be considered for risk management, the public involvement process shall be completed, the draft Phase I report shall have been reviewed by the BDE staff, and no Federal funds are used for the engineering.

8-3.09(c) After Authorization

When the work is authorized, the liaison manager reaches agreement with the Consultant on the procedure for work and the percentages of total project for the line items of work to be shown on the monthly progress report. It is imperative that the liaison manager ensures that the appropriate Department personnel and the Consultant are thoroughly familiar with the Agreement and the SAPCS, particularly with Sections 2.24, 2.32, 2.37, and 2.4, because improper procedures under these sections of the SAPCS may preclude payment to the Consultant.

8-3.10 Early Authorization To Proceed

8-3.10(a) Start-Up Agreement

At the option of the District Engineer or agency head, the District Engineer may authorize the Consultant to begin work by obtaining approval from BDE and signing a Start-up Agreement. The Start-up Agreement is available on all non-Federally funded projects.

Immediately after the final negotiation meeting, the district completes and e-mails a Start-up Agreement request memorandum to BDE. On Phase II projects where the district requests risk management, the risk management request is attached to the Start-up Agreement request. Approval or denial for the Start-up Agreement is e-mailed to the district from BDE within 3 working days of receipt of request. The district works with Office of Planning and Programming to secure approval of additional funds and the program number for any amount over the programmed amount.

The Start-Up Agreement request will not be granted if the disclosures for the Prime and Subconsultants were not submitted and approved.

The district, upon receiving approval from BDE and a complete proposal package from the Consultant, enters into an agreement with the Consultant using the provided Start-up Agreement template. The agreement amount may be for no more than $200,000 or 25% of the prime agreement amount. The Consultant signs the 3 copies of the agreement first, then the District Engineer signs and dates all 3 copies and at that time authorizes the Consultant to begin work. The Consultant may then work up to the Start-up Agreement amount.

The district sends a copy of the fully executed Start-up Agreement to Preliminary Engineering Section with the completed proposal package within 1 week of signing the Start-up Agreement. Failure to do so might result in a late filing affidavit by the district.

Upon receipt of the Start-up Agreement and the completed proposal package, the Preliminary Engineering Section develops the COD for the Start-up Agreement and proceeds with processing the complete proposal package.

Once the Prime Agreement is executed, it supersedes and includes costs stated in the Start-up Agreement. The Consultant may start, complete, and invoice for the work as specified in the Start-up Agreement. No other work may be started until the Prime Agreement has been executed, and the Consultant authorized.

No supplements may be written on the Start-up Agreement. The Start-up Agreement will not be obligated until the complete proposal is received from the district. The Consultant may not invoice for work until the COD is approved. The Preliminary Engineering Section tracks the Start-up Agreement through their database. Copies of the Start-up Agreement template and request memorandum for the start-up agreement are on IDOT's LAN.

8-3.10(b) Advanced Authorization

Advanced Authorizations are given in special circumstances, and authorize only one or two work items so the project can begin while negotiations and processing of the Prime Agreement are underway. The Advanced Authorization is limited to $100,000 and is signed by the Secretary of Transportation prior to authorization to proceed is given the Consultant. Work items typically consist of activities such as surveys, soil borings, and analysis, Bridge Condition Reports, Structure Reports, etc.

The recommendation for an Advanced Authorization by the District Engineer and or central office bureau chief is sent to the Director of Highways, through BDE, for concurrence before an Advanced Agreement is prepared. The district or central office bureau chief submits a memo explaining the need for an Advanced Agreement to the Director of Highways through BDE. The Secretary of Transportation must concur in the request on projects where the Consultant was chosen using the Secretary Select procedure.

A detailed description of the selected segment of work to be authorized is prepared enabling the Consultant to prepare a cost estimate for the advanced work quickly. The number of estimated man-hours after being prepared by the Consultant is e-mailed to the district and BDE for processing. BDE prepares and processes the authorization for signature. The Advanced Authorization's upper limit of compensation cannot be exceeded.

Negotiations for the Prime Agreement proceed as soon as practical after selection in accordance with normal procedures. These negotiations include the work effort required for all the work including the Advanced Agreement. The Prime Agreement is prepared for the total scope of work and complete cost, including the Advanced Authorization.

8-4 AGREEMENT ADMINISTRATION AND ADJUSTMENT

8-4.01 General

Administration of the Agreement is the responsibility of the agency (district/bureau) requesting use of a Consultant. The district/bureau is responsible for monitoring the execution and progress of the work.

A liaison manager is assigned and all work, preliminary or completed, and all project correspondence are channeled through the liaison manager. Invoices and progress reports are received by and the liaison manager requests payments. Certificates of Insurance showing that the Consultant has insurance as required by the Agreement shall be on file in BDE. A report listing Consultants with the prescribed insurance is sent by BDE to the districts/bureaus monthly.

The liaison manager is the Department's contact with the Consultant. The liaison manager ensures any changes are negotiated in accordance with the terms of the Agreement and the files are properly documented for all verbal instructions. The liaison manager is also responsible for documenting the Consultant's performance throughout the project and provides the Consultant Performance Evaluation.

8-4.02 Subcontracts by Consulting Engineering Firms

The SAPCS provides that the Department can utilize prequalified Subconsultants upon approval. Approval will be by the Bureau Chief of BDE. A copy of the fully executed subcontract is furnished to BDE before any work is authorized and clearly defines the scope of work, the schedule of completion, and the payment basis. To facilitate review of subcontracts and to standardize the routine provisions that are included in them, see the Prime Subconsultant Agreement located on IDOT's Internet Site. The following items provide additional guidance on subcontracts by Consultants:

1. Individual Professionals and Nonprofessional Work. All subcontracted work by professional Consultants requires negotiation of a subcontract. This does not apply to individual professionals that are on a retainer basis to the Prime Consultant; nor does it apply to nonprofessional work, which shall be obtained by competitive bidding.

2. Supplemental Agreements and Profit. If the scope of work in the Prime Agreement does not include the proposed subcontract work deemed necessary by the district, the Prime compensation and scope of the Prime Agreement is modified by a Supplemental Agreement to include the subcontract work. If the Prime Agreement has a fixed fee for profit that includes profit on items later proposed to be subcontracted, the Prime Agreement shall be modified to exclude profit to the Prime Consultant on subcontracted items (i.e., no double profit).

3. Fee Estimates. The Subconsultant's proposal for work shall contain direct payroll, direct costs, man-hours or units of work, and supported by back-up data as required for a Prime Agreement. The proposed man-hours and direct costs will be approved by the administering district/bureau based upon its estimate of cost and submitted to the responsible central office bureau along with the Subconsultant's proposal. Payroll additive percentages used in the fee estimate shall be approved by the BAA.

4. Payment. The Consultant may bill the Department for the Subconsultant's work as the work progresses. If the method of payment is lump sum or unit of work, payment will be based upon the percentage of work completed as indicated on the Progress Schedule. If the method of payment is DLM or CPFF, payment is based upon the number of man-hours completed. The subcontract provides that the final payment will not be made to the Subconsultant by the Prime Consultant until an affidavit is submitted showing that all obligations incurred by the Subconsultant in performance of the work have been paid in full and final payment shall be made subject to adjustment based on the determinations of the Department's auditors as to the correctness and allowability of the billing.

8-4.03 Supplemental Agreements

8-4.03(a) General

During the course of a Consultant's work on a project, occasions arise where changes in the negotiated work items are identified. The nature of these changes may be such that they can be processed using normal procedures, or they may need to be performed on an expedited basis.

All changes in required schedule, negotiated scope of work, or fee under the Agreement require the Department's written authorization to the Consultant prior to implementation. The Consultant, per the Agreement, forfeits its right to claim additional compensation for added work done prior to receiving written authorization from the Department. It is the liaison manager's responsibility to ensure that any changes are negotiated, agreed to, and authorized in full accordance with the SAPCS and the terms of the Agreement. When the Consultant is notified of changes the Department finds necessary, the notice should clearly state that it is not an authorization to proceed with the changes and advise of the steps necessary to negotiate the change. When in doubt, the liaison manager contacts BDE for procedural advice.

Increases in the negotiated work are accomplished through Supplemental Agreements which include the scope of work to be accomplished, any necessary changes to the project schedule, and the manner of payment with a stated Lump-Sum Amount or Upper Limit of Compensation.

Most Supplemental Agreements are applicable in the following situations:

- extension of time,
- corrections in contract language,

- deletion of work,
- additional work advertised but not previously negotiated, and
- additional level of effort of previously negotiated items.

All Supplemental Agreements must have a Consultant Agreement Approval Sheet (CAAS) approved prior to execution. CAAS states reasons for the additional cost and man-hours for each reason. The CAAS also includes the work items involved, why it is being added, the cost for each item involved, and why the Consultant is entitled to additional compensation.

All Supplemental Agreements are authorized and paid for in accordance with the terms of the Agreement. Normal procedures provide three ways of modifying the Agreement as follows:

- additional work Letter-Form Supplemental Agreements authorized by the District Engineer and accepted by the Consultant,

- Letter-Form Supplemental Agreements signed by the central office bureau chief and accepted by the Consultant, and

- Supplemental Agreements signed by the Consultant and the Secretary of Transportation.

These procedures are applicable as follows:

1. Additional Work. If the Agreement provides for additional work payment, the District Engineer may negotiate and authorize additional work in aggregate up to the lesser of 25% of the prime compensation or $50,000 if there are no Federal participation or bond funds involved in the costs. The District Engineer approves CAAS for additional work. Additional work authorized by the District Engineer may not be used when adding a Subconsultant or if the additional work increases the contract amount to or by $250,000 or more in a fiscal year. The total amount authorized in a fiscal year may not exceed $250,000 (i.e., if authorized in the same year that prime contract plus supplements may not exceed the dollar amount). The terms of the Letter-Form Supplemental Agreement are authorized upon signature by the Consultant who returns a copy to the Department. A copy of the authorization is sent to BDE for fund obligation.

2. Letter-Form Supplemental Agreements. Letter-Form Supplemental Agreements are signed (approved) by the central office bureau chief and sent to the Consultant. CAAS Letter-Form Supplemental Agreements are approved by the central office bureau chief. The terms of the Supplemental Agreement are authorized upon signature by the Consultant who returns a copy to the Department. Letter-Form Supplemental Agreements are applicable in the following situations:

    - partial obligations,
    - transfer of work between Prime Consultant and Subconsultant,

- additional work, and
- no Federal participation or bond funds.

A Supplemental Agreement by Letter-Form Agreement is limited to $150,000. The cumulative total of Letter-Form Supplemental Agreements is 15% of the prime compensation or $150,000 whichever is the less. Letter-Form Supplemental Agreements authorized by the appropriate bureau chief may not be used if the additional work increases the contract amount to or by $250,000 or more in a fiscal year.

3. Supplemental Agreements Signed by the Secretary of Transportation. If the limitations discussed in Items 1 and 2 above are exceeded, a Supplemental Agreement with the appropriate Department signature(s) shall be used. CAAS for Supplemental Agreements are approved by the District Engineer. All procedures for estimates, review, and approval that apply to Agreements also apply to Supplemental Agreements. The liaison manager through man-hour and non-salary direct cost approval will implement negotiation of the Supplemental Agreement. The following information is then submitted to BDE:

- Draft Scope of Work With Schedule (Bar Chart);
- BDE Procedure Memorandum 17-xx;
- Negotiation Meeting Minutes;
- Cost Estimate Of Consulting Services (CECS);
- Average Hourly Rates (Item/Overall);
- Revised QC/QA Plan, if applicable; and
- Direct Costs.

BDE obtains fee approval, finalizes the Supplement Agreement, and obtains FHWA approval, if required, and authorizes the work.

8-4.03(b) Early Authorization To Proceed

The Consultant may be authorized to work on items outside of the negotiated scope once that work is identified and agreed to by all parties. These procedures allow the Consultant to begin/complete the additional work; however, the Consultant may not invoice for the increased work until the Supplemental Agreement has been negotiated, signed, and the contract obligation increased.

Once the need and extent of the additional work is identified by the Department, and negotiations with the Consultant begun, the appropriate district personnel authorizes, by letter, the Consultant to proceed with the work up to a specific dollar amount. The letter should outline the additional work being authorized, the amount being authorized, with a copy of the letter sent to BDE.

Figure 8-4A presents the amounts for prior approval authorization.

Authorization	Amount
Bureau Chief or Studies & Plans Engineer	$10,000
Program Development Engineer	$30,000
District Engineer	$50,000

PRIOR APPROVAL AUTHORIZATION SIGNATURE AUTHORITY
FIGURE 8-4A

Supplemental agreement negotiations should be ongoing. When the total supplemental cost has been negotiated, the required Consultant Agreement Approval Sheet (CAAS) is prepared by the district and submitted electronically to BDE. The CAAS submittal is prior to the district receiving the Supplemental Agreement package from the Consultant. Upon approval of the CAAS, the district may authorize the Consultant in writing to proceed up to the approved dollar amount of the CAAS subject to a maximum of $240,000 in a fiscal year. At no time shall a Consultant be authorized for over $240,000 until the full Supplemental Agreement is processed and approved.

This procedure only establishing limits for giving authorization to proceed while Supplemental Agreements are under negotiation and processing. The additional work may not be invoiced until the full Supplemental Agreement is processed and signed. Any additional funding amounts required still must be secured through OP&P.

Figure 8-4B summarizes the dollar and percent limitations to the various Supplemental Agreement options.

TYPE OF ACTION	MAXIMUM ACCUMULATIVE SIZE		AUTHORIZED BY
	Amount	% Of Prime	
District Letter-Form	$50,000	25%	District Engineer
Letter-Form Supplement	$150,000	15%	Central Bureau Chief
Supplement	No Max.	No Max.	Secretary of Transportation

Note: If the Supplemental Agreement increases the value of the contract to or by $250,000 or more in a fiscal year, the Agreement requires the signature of the Secretary of Transportation, Director of Highways, Chief Counsel, and Director of Finance Administration. In these situations, additional work and Letter-Form Supplemental Agreements may not be used.

SUPPLEMENTAL AGREEMENT OPTIONS
(Limitations and Time Required)

Figure 8-4B

8-4.04 Monitoring Consultant's Work

8-4.04(a) Agreement Schedule

After the work under the Agreement has been authorized, the liaison manager meets with the Consultant. They agree on detailed procedures and progress report percentages for elements of work. They also indicate on the appropriate progress report the calendar days to complete each of the various work elements which should agree with the calendar days indicated in the Agreement Project Schedule. The date due also is indicated on the Progress Report for each work element after authority to proceed with that work element is given. All report forms and invoice forms are provided to the Consultant at this time. Standard forms for this purpose are available through the form button within IDOT and on the Department's internet site.

As work progresses and work elements are approved, the date due for other work elements should be indicated on the Progress Report. These dates should be revised, as needed, if the Consultant's work is stopped or placed on hold by the Department. The "Remarks" column may be used to indicate the date on which the work element was submitted.

The district's liaison manager, or other appropriate official, indicates on the Progress Report if the project is on schedule or behind schedule. If behind schedule, the reason for the delay is stated on the Progress Report; the reverse side of the form may be used if needed.

If it is determined that the work is behind schedule due to factors under the Consultant's control, this is reflected on the Consultant's Performance Evaluation Form.

If work is lagging due to no fault of the Consultant, the liaison manager should make every effort to expedite the work because the Agreement provides for fee renegotiations if completion is delayed beyond the time limits set in the Agreement. If the completion schedule is to be revised, the liaison manager has the Consultant request approval of the revised schedule. A copy of the approved schedule change is then furnished to BDE. If the work is behind schedule due to factors under the Consultant's control, the liaison manager issues written remedial instructions to a principal of the firm. If this fails to correct the problem, it may be necessary for the using agency to recommend termination of the Agreement to BDE. The liaison manager may recommend that the Agreement be terminated for other reasons in the best interest of the Department such as unsatisfactory work or change in Department priorities shifting construction time too far into the future.

8-4.04(b) Documentation

Maintain a complete log in the files of what was decided during all phone calls, meetings, visits, and inspections. Copies are furnished to the Consultant and, for purposes of FHWA audit and/or of documenting performance

8-4.04(c) Consultant Invoices

Consultant invoices should be processed for payment only when the reported percentage of completion is approved. The liaison manager will promptly notify the Consultant if a lesser percentage should be used. Total costs in excess of the approved percentage of completion times the upper limit of compensation should not be approved for partial or final payments. When such higher costs are billed, the liaison manager determines if this is due to Consultant inefficiency and, if so, takes appropriate steps to correct the problem. If overruns are due to underestimation of the negotiated scope by the Department, the liaison manager takes steps to have the limits adjusted; see Section 8-4.03. After invoices are found reasonable, or are corrected to reasonable, and in accordance with the terms of the Agreement, the liaison manager promptly requests the BAA make payment.

8-4.04(d) Federal Funding

When Federal funds are involved in the Agreement, the liaison manager will keep the FHWA representative apprised of the Consultant's work and, if the FHWA requests, arrange to conduct joint reviews of the work.

8-4.05 Evaluation of Consultant's Performance

8-4.05(a) General

The Department formally evaluates all work performed by Consultants. During the life of a project, the liaison manager informally evaluates a Consultant by keeping lines of communication open, and keeping the Consultant aware of any problems or concerns the Department has with its performance. Among the areas evaluated are:

- Timeliness,
- Completeness of product,
- Plan and Constructibility Quality,
- Cooperation/Management,
- Quality/Accuracy,
- Public Involvement/Agency Coordination, and
- Innovation.

There are some Consultant errors which the Department views as significant and substantial enough to cause the project to be in jeopardy. These are "Fatal flaws" and where these Consultant errors occur, the highest final rating the project may receive is a "Satisfactory," providing the Consultant makes corrections and improves their quality control. These errors result in an interim rating of "Substandard" or "Poor."

Fatal Flaws are defined as:

- errors involving significant structural deficiencies or safety on bridges/structures,
- errors resulting in the Consultant failing to identify significant environmental impacts,
- errors involving substandard geometrics for the specified design criteria,
- inaccurate survey information impacting the project's constructability,
- inappropriate behavior by the Consultant when working with the public,
- false information used by the Consultant in the report documentation, and
- adjustment of letting date or design approval due to late Consultant submittals.

The evaluation process by nature is a subjective process. Although an "Excellent" project is a goal, in practice very few projects are truly "Excellent." An Excellent Project has the following characteristics:

- The submittals contained no major errors and very few minor errors.

- The Consultant during the life of the project was self-managed (e.g., responsive to requests, minimal calls/requests on standard procedures, took lead of project).

- The Consultant was innovative (e.g., focused special resources on issues, perceived and managed problems early and effectively, innovatively used resources/technology, posed solutions which saved the Department significant funds).

- Submissions were not only early, but allowed the Department to advance a letting or advertisement to an earlier date. Consideration will be considered for an accelerated Department dictated timetable.

- The project was cost effective, safe, and considered context-sensitive design.

- Quality presentation of products was acceptable (e.g. spelling, grammar, labeling, links).

- The Consultant maintained a consistent high-quality level of personnel throughout the life of the project.

- Complied with all Department manuals, policies, procedures or explained exceptions with minimal prompting by the Department.

- Consistently promoted a positive Department image and minimized controversy during public involvement.

Eight evaluation forms exist covering the areas of prequalification. These forms are available through IDOT/MS Consultant Performance Evaluation (CPE) Data Base. Contact the Consultant Unit in BDE for access to the data base. The following are areas generally evaluated under each prequalification category. The corresponding definitions are guidelines for evaluating the Consultant's work. The categories are not intended as absolute. Under each evaluation area on the second page of the evaluation forms, the Consultant's performance may

actually fall between the three specified levels. When this is the case, the evaluator should mark the forms accordingly. Consider the following guidelines when evaluating Consultants:

1. Timeliness.

   - Exceeds – Consultant submits key items of work consistently early affording the Department the opportunity to advertise the next phase of work on an earlier bulletin.

   - Meets – Consultant submits key items of work consistently on or about the time agreed to by both parties.

   - Needs Improvement – Consultant submits key items of work consistently past the time agreed to by both parties.

2. Completeness/Adequacy.

   - Meets - Consistently on key items of work, the Consultant includes all items in a submittal as specified in Department manuals, policies, procedures and the contract documents.

   - Needs Improvement - On key items of work, the Consultant consistently fails to include all items in a submittal as specified in Department manuals, policies, procedures and the contract documents.

3. Quality/Accuracy.

   - Exceeds – Consultant submittals contain no major errors and very few minor errors. Minimal hours are expended by Department staff in review of submittals. Presentation of material is clear, concise, and of high quality (e.g., spelling, grammar, labeling, links). The next phase of work experienced little or no major problems/questions attributable to the Consultant. The project thoroughly analyzed the major elements of the project. Maintained a high quality of work with a Department-accelerated schedule.

   - Meets – Consultant submissions contain no major errors and some minor errors. Presentation of material is clear, concise, and adequate (e.g., spelling, grammar, labeling, links). The next phase of work experienced the expected problems/questions attributable to the Consultant.

   - Needs Improvement – Consultant submissions contain major and minor errors. The Consultant demonstrated low quality presentation of products (e.g., spelling, grammar, labeling, links). The next phase of work experienced

problems/questions attributable to the Consultant. The Consultant showed poor understanding of the work type.

4. Cooperation/Project Management.

- Exceeds – Consultant was consistently available and responsive to and ahead of problems and concerns. The Consultant initiated open and timely communications with the Department. Consultant was consistently self managed.

- Meets – Consultant was available and generally responsive to problems and concerns. The Consultant initiated open and timely communications with the Department. Consultant was self managed at times.

- Needs Improvement – Consultant was generally not available nor responsive to problems and concerns. The Consultant communications with the Department were rarely timely. Consultant continually asked the Department for clarification on standard procedures.

5. Public/Agency Coordination.

- Exceeds – The Consultant independently developed proactive and creative public/agency involvement techniques which both identified and effectively responded in a timely manner to minimize highly controversial issues. The Consultant managed and implemented the public relations program and presented accurate and pertinent project information to the public, news media, and coordinating agencies, which resulted in project acceptance and a positive department image.

- Meets – The Consultant followed Departmental guidelines in performing project coordination with the public, news media, and agencies in such a manner that fulfilled all requirements and resulted in project acceptance and design approval.

- Needs Improvement – Consultant responses were misleading, incorrect, or inflammatory at public/agency involvement meetings. Presentation material (e.g., aerial exhibits, details, tables, data) contained incorrect or conflicting information which reflected negatively on Department, and acceptance of the project design features. The Consultants public/agency involvement program required an over-reliance on Department staff to correct, revise, and present project improvement/mitigation

8-4.05(b) Interim Evaluations

The evaluations are made for both Prime Consultants and Subconsultants at interim and final stages. The interim evaluations are made on or about April 1 and October 1 provided the work has been underway for at least four months. The structural work however requires two interims, one at TS&L and one at prints of the final plan stage, and the final overall evaluation. An interim evaluation accompanies a submittal when returned to the Consultant due to excessive errors/corrections.

All interim evaluations are sent to Consultants at the same time they are transmitted to BDE. Interim evaluations should be sent to the Consultant about 30 days after April 1 and October 1.

The evaluations are a very important tool for both the Consultant and the Department. They provide timely feedback to the Consultant concerning its performance on an active project. The interim evaluation allows the Consultant to correct any deficiencies during the life of the project, in some cases turning what would otherwise have been a bad experience for all involved, into a good one. The responsibilities for completing Consultant evaluations are documented in the following sections.

8-4.05(c) Final Evaluations

After the Consultant completes the work covered in an agreement, final evaluations are prepared by the district and/or bureau for the Consultant and Subconsultant in the appropriate categories. The Department's project manager and his/her supervisor concur and sign the final evaluation. The final evaluation is sent to the District Engineer or bureau chief for concurrence and signature. The final evaluation is then sent to the Consultant and transmitted electronically to the Consultant Unit in BDE using the CPE Data Base.

8-4.05(d) Phase I Studies and Environmental Document Evaluations

The district is solely responsible for completing interim and final evaluations of Consultants performing rehabilitation (3R) projects and Simple Environmental Assessments for Rehabilitation (3R) or Reconstruction/Major Rehabilitation (3R) projects. However, before completing interim or final evaluations of Consultants performing work on these projects, the district will obtain input from the BDE's regional field engineers. The Consultant's ratings should reflect a consensus of the district and the BDE's regional field engineers' knowledge of the Consultant's work.

Before completing interim or final evaluations of Consultants performing Phase I Studies and Complex Environmental Assessments of Reconstruction/Major Rehabilitation (3R) and New Construction/Major Reconstruction projects, the district will obtain input from the BDE's regional field engineers and environmental project coordinators on engineering, environment, and public

involvement evaluation criteria. The interim and final ratings reflect a consensus of the district and BDE's staff experience in working with the Consultant on the project being evaluated.

For interim and final evaluations of Consultants performing Phase I Studies and Environmental Impact Statements of Reconstruction/Major Rehabilitation (3R) and New Construction/Major Reconstruction projects, the BDE's environmental project coordinators will obtain input from the district on the environmental and public involvement evaluation criteria and complete these parts of the form. The form then will be sent to the district. The district also will obtain input from the BDE's regional field engineers on the engineering evaluation criteria and complete the remainder of the form.

8-4.05(e) Structure Plan Evaluations

The performance evaluations of Consultants or Subconsultants preparing structure plans is completed by the Bureau of Bridges and Structures. An interim evaluation is completed on the TS&L plans and on prints of the final plan stage. The final overall evaluation is made after the completed drawings are submitted for letting and takes into account the two interim ratings.

In the case where the completed final plans are not placed on an immediate letting, the district is required to forward a reduced set of bridge plans (prints) to the Bureau of Bridges and Structures (BB&S). This procedure will allow the BB&S to complete its final overall evaluation of the Consultant in a timely manner.

8-4.05(f) Other Evaluations to be Completed by the Districts or Central Bureau

The interim and final performance evaluation of Consultants preparing construction plans, performing specialized studies, surveys, geotechnical engineering, construction engineering, preparing photogrammetric mapping, and other services is completed by the appropriate district personnel. These evaluators may access the CPE Data Base through their computers.

8-4.05(g) Final Project Evaluations

Upon completion of all the final evaluations by category by the district and /or bureaus, a final project evaluation will be prepared by BDE. The final project evaluation is prepared after PE II for PE I work and after construction is complete for PE II and PE III. If the next phase is delayed more than one year, the final project evaluation should be prepared at that time.

Where the project is evaluated by more than one department evaluating entity (e.g., BB&S, Environment), the final evaluations are transmitted to BDE by the District Engineer and/or bureau chief. The BDE calculates the appropriate weighted average for the final project evaluation based on the total negotiated man-hours in each area. This includes any additional hours in the Supplemental Agreement.

If unit prices are involved, the percent attributable to unit prices is first determined (25% of the unit price dollars divided by the total pay for performance amount multiplied by 100) and then the percent for man-hours for each category is determined by dividing the man-hours in that category by 100 minus the percent for unit prices. If a category involves both man-hours and unit prices, the two percentages are combined.

The percent of man-hours is multiplied by the evaluation number shown in Figure 8-4C:

Rating Received	Evaluation Number
Exceed	10
Meets	7
Satisfactory	5
Substandard	3
Poor	0

EVALUATION NUMBER

Figure 8-4C

The final project evaluation rating is the weighted average of all the evaluations as determined in Figure 8-4C.

The final project evaluation rating for the average weighted values are shown in Figure 8-4D.

Average Weighted Value	Final Project Evaluation
9.00-10.00	Excellent
6.50-8.99	Good
4.50-6.49	Satisfactory
3.00-4.49	Substandard
0.00-2.99	Poor

AVERAGE WEIGHTED VALUES

Figure 8-4D

Each evaluating entity receives the weighted evaluation for review and comment with 1 week to comment. If no comments are received or when all comments are reconciled, BDE transmits the completed final project evaluation to the Deputy Director of Program Development for final review. After review by the Deputy Director of Program Development, the final project evaluation is transmitted to the Consultant.

8-4.05(h) Consultant Selection Committee

Performance evaluations are provided to the Consultant Selection Committee as part of the preliminary review and rating information. A five-year average of performance evaluations on

similar types of projects is used for this purpose. The Selection Committee is also apprised of all appeals.

A listing of all evaluations of Substandard or Poor (interim and final) is forwarded to the Consultant Selection Committee. The Consultant Selection Committee considers this information when deliberating at the selection meetings.

8-4.05(i) Below Satisfactory Interim Evaluations

Where a below satisfactory rating is received on an interim evaluation: A substandard or poor rating can be removed based on any of the following conditions:

- Five years has elapsed since the final evaluation of Substandard in a particular category.
- A subsequent interim evaluation on the same project in the same category is satisfactory or better.
- The Consultant meets with the district and/or the central office bureau that made the substandard or poor evaluation and the evaluation for the project is upgraded to satisfactory. This condition involves situations where there has been a misunderstanding between the Department's evaluator and the Consultant.
- The Consultant demonstrates to the district and/or the central office bureau that corrective measures have been taken to correct the less than satisfactory performance. Under this condition, the evaluations will not be removed but marked with an asterisk to indicate that corrective measures have been implemented by the Consultant to the satisfaction of the district and/or the central office.

8-4.05(j) Below Satisfactory Final Evaluations

A final evaluation of "Poor" results in loss of prequalification in the category being rated. Two final evaluations of "Substandard" within five years in a category also results in a loss of prequalification in that category. Occasionally, errors appear during the next phase. If this occurs, the Department reserves the right to revise its final evaluation of the Consultant. If IDOT determines these errors are significant, and the Consultant may be billed for extra costs as a result of the errors.

8-4.05(k) Consultant Appeal Process of Final Evaluation

After receipt of the final evaluation, the Consultant has 30 days in which to appeal a Substandard or Poor evaluation. The appeal is submitted in writing to the Department entity

that prepared the final evaluation (e.g., District Engineer, Bureau of Design and Environment, Bureaus of Bridges and Structures).

When an agreement cannot be reached with the Department entity that prepared the final evaluation, the BDE Bureau Chief reviews the documentation file and the evaluation, and meets with the Consultant and the Department entities involved. If lack of resolution results after meeting with the BDE Bureau Chief, the review and meeting will be advanced to the Deputy Director of Highways. The final appeal will be to the Director of Highways.

8-4.05(l) Pay for Performance

When provided in the Consultant's Agreement, the Consultant's performance is tied to the amount paid the Consultant. The amount varies depending on the final evaluation received for a project. Adequate performance receives no reward. Excellent performance receives a bonus while a poor performance results in a reduction of pay.

Upon submission and approval of the final invoice and final project evaluation determination, the incentive/disincentive will be applied as shown in Figure 8-4E.

Final Project Evaluation Rating	% *
Excellent	5
Good	3
Satisfactory	0
Substandard	-5
Poor	-10

* The percentage is applied to 1 x negotiated direct labor dollars, including all Supplemental Agreements. This amount is stipulated in the Consultant's Agreement.

PROJECT EVALUATION RATING
Figure 8-4E

8-4.06 Completion, Efficiency Factor, and Termination Procedures

8-4.06(a) Completion

When any Consultant Agreement is ended, whether by completion of the work or by termination procedures stipulated in the Agreement, copies of the final voucher request, request for audit, and the final invoice with all its attached documentation resubmitted by the administering agency to BDE. Include the final Consultant Performance Evaluations, see Section 8-4.05, for the Prime Consultant and any major Subconsultants.

Upon receipt of a final audit by the BAA, the agency prepares a COD deobiligating excess funds for jobs that have reduced costs. The COD is submitted to the BAA with a copy to the Agreements Unit. This completes the closeout procedures for projects, which are not programmed for Federal fund participation. If the final audit recommends increasing the Agreement amount, a COD is prepared by BDE.

The agency must submit the following additional documentation to the BAA for all programmed Federal-aid projects when completed (after final costs are confirmed by the BAA audit):

- the date all work was completed or the Agreement was terminated;
- a list of all authorization dates from the FHWA, for work authorized on the project, to verify that it is participating;
- a list of all construction sections under the specific preliminary engineering Agreement. In the event the Agreement is for work other than construction plans, the type of work should be listed and its acceptance verified (e.g., "the report was approved by _____*(name)*_____ on ____*(date)*____)," or "the Soils Committee approved the soils report on (____*(date)*____"); and
- method of payment stipulated in the Agreement. Note all the methods and areas of application if several methods of payment are used.

8-4.06(b) Efficiency Factor

When provided in a Consultant Agreement, the Consultant has the opportunity to share with the Department in any direct labor cost savings achieved by the Consultant from the original direct labor estimated between the two parties. Upon submission and approval of the final bill, when the negotiated direct labor cost upper limit is not reached, the Consultant will be entitled to 50% of these remaining funds. This will not apply on Various/Various work order agreements and on Phase III projects.

The efficiency factor is applied as follows:

1. DLM. The district negotiates man-hours and the upper limit of compensation as in the past. When the actual payroll multiplied by the specified multiplier (3+R) is less than the negotiated payroll multiplied by the specified multiplier, the Consultant is entitled to 50% of the difference. When the final bill is submitted and approved, the district requests the Consultant to submit a bill for 50% of the remaining funds when the direct labor upper limit is not reached.

2. CPFF. An efficiency factor will also be applied to those contracts using the cost plus fixed fee method. When the contract's direct labor cost upper limit is not reached, the

Consultant will receive 50% of the difference between negotiated and actual direct labor plus overhead.

Subconsultants will be compensated in the same manner as the prime consultant.

8-4.06(c) Termination

If an administering agency desires to terminate an Agreement, a memorandum recommending termination will be submitted to the central office. The memorandum will include:

- the reasons for recommending termination,
- the percentage of work completed,
- the percentage of fee expended, and
- an estimate of the cost and time required to complete the work, if applicable.

Upon receipt of central office's approval, the agency follows the termination procedures stipulated in the Agreement. Copies of all correspondence are sent to BDE.

8-4.07 Reassignment of Vested Interest in an Agreement to Another Consultant

Occasionally, it is necessary to assign a working agreement to another Consultant because of an ownership or organizational change (e.g., dissolution of the firm, death of a principal, absorption of the firm by corporate expansion, a partnership change). The existing Agreement is kept in force by an Assignment to the new legal entity.

The Assignment is a legal document that transfers all rights, obligations, and interests in the Agreement from the original Consultant (the assignor) to the new Consultant (the assignee). It must be properly executed in triplicate by the assignor and the assignee and then submitted to IDOT for acceptance and signature. A copy of the Assignment is returned to the assignor and assignee when fully executed. BDE Form 2364 may be used s a guide in determining whether the Assignment contains the essential elements. It is available on the IDOT's internet site.

If there is no ownership or management change and the change is only related to name, address, absorbing another firm, or adding personnel to the firm which is p rty to the Agreement, a notice of the Assignment, authorization to make payment to the new Consultant, and release of obligation executed by the assignor is sufficient to continue the Agreement work and payments.

The Agreements Unit makes distribution of information on the reassignment of a Consultant to the affected district/bureau and the BAA.

8-5 CLAIMS

8-5.01 Damage Due to Consultant Errors and/or Omissions

By contract, a Consultant is responsible for damages incurred by the Department as a result of his/her errors or omissions. When the Department believes a fair and equitable price for an omission is obtained from the Contractor and the cost would have normally been occurred by the nature of the contract, the Consultant typically is not charged damages for his/her omissions.

8-5.01(a) Errors By PE I Consultant Discovered During PE II

The district/bureau will notify the Agreements Unit if errors in the PE I work have occurred that will result in additional cost. The notification should describe the situation, the corrective measures that result, and the amount of the Consultant's liability. The letter of notification should be similar to the samples in Exhibit 3 in Section 8-6; also see Section 8-5.01(b). If the district/bureau deems it practical, the Consultant responsible for the error may be given the opportunity to assist in making the corrections to reduce his/her financial liability.

8-5.01(b) Errors By PE II or III Consultant Discovered During Construction

When an error or omission is found resulting in damages to the Department and is believed to be caused by the Consultant, the District's Bureau of Project Implementation or the Bureau Chief responsible for the phase of work where the error was discovered first determines if time is critical and then:

1. Where Time is Not Critical. Notify the Program Development Engineer or the appropriate Department office immediately. The Department's Consultant Manager notifies the Consultant firm of the error or omission either by e-mail, fax, or mail. The Consultant is given an opportunity to be involved in the resolution of the error or omission along with the timetable involved. After the investigation, if the error or omission is determined not to be the Consultant's responsibility, the firm may submit an invoice for the hours used during the investigation. For a sample letter of notification see Exhibit 3 in Section 8-6. The fact that the Consultant provided assistance in the resolution of the error or omission will not be construed as neither absolving the Consultant of his/her portion of the damages nor implying the Consultant's responsibility for the damages.

2. Where Time is Critical. Notify the Program Development Engineer or the appropriate Department office of the error and also identify the steps that were taken to remedy the error. If the Department determines the error is the Consultant firm's responsibility, the Department's Consultant Manager notifies the Consultant firm of the error and the

remedy by e-mail, fax, or mail. For a sample letter of notification see Exhibit 3 in Section 8-6.

The initial notification to the Consultant firm includes: (1) the nature of the error or omission, (2) the action sought from the Consultant, if any, and (3) the time constraints required for the response or the solution recommended for implementation. The extent of liability for the error may be determined at a later time and is not included in the initial notification. A copy of the notification is sent to the BDE.

The Bureau of Project Implementation corrects the error or omission and submits the contractor's authorization (BC 22) to the Central Office Bureau of Construction. The BC 22 should provide detailed information on the cost to correct the error or omission and a memorandum from the district Bureau of Program Development that indicates that the Consultant is responsible for the error or omission. The Bureau of Construction then forwards a copy of the BC 22 and all documentation to BDE and indicates the amount to be billed to the Consultant.

8-5.01(c) Notifying Consultant of the Cost of the Errors or Omissions

The Agreements Unit in BDE will notify the Consultant of the amount and extent of liability of the Consultant resulting from the errors and/or omissions. The Consultant will be given 30 days to respond to the notification indicating either their agreement that they are responsible for the claim or their intent to appeal the claim. A Consultant may request an extension of that 30 days for more complex situations so there is sufficient time to investigate the matter. If the Consultant agrees that they are responsible for the claim, an invoice will be sent to the firm as set forth in Section 8-5.01(f). If the Consultant does not agree that they are responsible either totally or partially, follow the dispute resolution process in Section 8-5.01(e).

8-5.01(d) Errors and Omissions Threshold (EOT)

In recognition that the Department is not seeking a level of effort required to produce a perfect product and in order to reduce the time and expense for both the Department and the Consultant in processing claims for minor dollar amounts, an EOT will be used. Claims for damages involving errors and/or omissions are not to be billed to the Consultant unless the damages exceed the EOT. The EOT is defined as ½ of 1% of the amount of the construction project or $5,000, whichever is less. Errors and omissions are defined in the Standard Agreement Provisions for Consultant Services. In addition, no bill less than $1,000 shall be sent to the Consultant. The amount billed is the total amount exceeding the EOT not previously billed, if $1,000 or greater, and may be from one or more occurrences.

Where a Consultant designed multiple projects under one consultant contract, there will be a separate EOT for each project (e.g., one Phase I report for multiple Phase II projects, one Phase II contract for multiple construction contracts).

8-5.01(e) Dispute Resolution

In the engineering contract, the Department and the Consultant agree to work together on a basis of good faith and fair dealings. If the Consultant does not agree that they are responsible for the errors or omissions, they have 30 days to respond in writing to BDE that they intend to appeal the claim. The appeals are to be submitted in writing to the district, with a copy to the BDE, no later than 6 months after notification by the Department of damages.

The district will review the Consultant's appeal and then inform the Consultant of the results of the Department's review of the Consultant's appeal. If the Consultant then agrees that they are responsible for the claim, an invoice will be sent as set forth in Section 8-5.01(f).

After the District Engineer makes a final determination and the Consultant still does not agree that they are responsible for the claim, they may request that BDE review their position. If BDE upholds the District Engineer's findings that the Consultant is responsible for the claim, the Consultant may request a review by the Director of Highways.

After the Director of Highways has completed his/her review, a letter will be sent to the Consultant indicating the results of their appeal. The letter will advise the Consultant that BDE will be sending an invoice for the claim, if appropriate. The Director's written response is final and concludes the appeal process.

The Consultant may request an opportunity to present the appeal orally at any of the appeal levels.

8-5.01(f) Obtaining Reimbursement for Consultant Errors or Omissions

If the Consultant agrees that they are responsible for the errors and/or omissions or the dispute resolution process has been completed with a finding of Consultant responsibility, BDE will send an invoice to the Consultant. Procedures for processing invoices and accounts receivables are contained in the *Revenue Accounting Manual* which is available on the Department's local area network (LAN) site under Resources. The "Payment Due Date" on the invoice should be 30-45 days from the date of the invoice. If payment is not received by the due date, use the collection procedures described in Chapter 4 of the *Revenue Accounting Manual*. If those procedures fail, refer the matter in writing to the Bureau of Claims in the Office of the Chief Counsel. The referral to the Bureau of Claims should include all correspondence from the appeal and collection processes.

8-6 EXHIBITS

The following exhibits are for use on Consultant developed and /or design projects:

Exhibit 1 – Guidelines for Preparing PTB Project Advertisements.

Exhibit 2 – Complexity Factors.

Exhibit 3 – Sample letters of notification.

EXHIBIT 1

Guidelines for Preparing PTB Project Advertisements

Page setup for margins:
Top = 1 inch
Bottom = 1 inch
Left = 1-1/2 inches
Right = 1 inch
Font = Arial 11

FULL JUSTIFY TEXT
The text shown in the shaded area contains wording as it should appear in the PTB Item description.

Description: **Bold and Underline**: Job Number, Route (Name, if applicable), from, to, County, & District (spell out district number)

Job No. D-91-123-12, I-77 (FA 555) (Mine Road), from US 45 (Yours Ave.) to I-67 (Ours Tollway), Cook County, District One.

Bold: DBE requirement, if applicable (required for projects with estimated fees of $400,000 or greater):

- **15.00% for District One**
- **12.00% for District Eight**
- **10.00% for all other Districts**

This project requires 10.00% DBE participation.

Complexity factor, where the complexity factor is defined as (R)
Direct Labor Multiple (DLM), R = 0, 0.003 or 0.008;
Cost Plus, R = 0, 0.035, or 0.07
The **Complexity Factor** for this project is **0.035**.

First meeting: Date, time, and location, (should be no earlier than the week following selection):
The Consultant who is selected for this project is scheduled to attend a negotiation meeting on **January 1, 2020** at **9:00 A.M.** at the District Twenty Office in **Heaven**.

Description of services required: Begins with: Phase *(I, II, or III)* engineering services are required for .....
Include here if the project is to be in metric or English.
All work for this project will be in English units.

Second paragraph, if needed, begins with:
This project includes .... followed by additional descriptions and or work required.

When multiple structures are included in the project, list with bullet points each structure including structure number.

- XYZ Road over 123 Road (S.N. 001-5432)
- UVW Road over 123 Road (S.N. 001-2468)

Add what the Department will furnish. Begin with:

The department will furnish the Consultant with.....

Construction Costs/Completion dates:

The estimated construction cost for this project is $_____. The Consultant's work includes [plans, special provisions, estimates, if listing several items use bullet points)(the final report) etc.] This contract must be completed by _____.or This work shall be completed within _____ months after authorization to proceed.

When the district has additional requirements to be shown on Exhibit A, the requirements should be listed as bullet points. A statement requiring Exhibit A to be submitted for all projects is in the front of the bulletin and this requirement should not be restated. The Consultant must list all key personnel on Exhibit A.

If key personnel are listed, use the following applicable dotpoints for Phase I and II projects, modify to meet project's specific requirements.

Key personnel listed on **Exhibit A** [& **B** for Environmental and Location Study projects] for this project must include:

- The person who will assume the duties of Project Manager for all aspects of the work documents (must be an Illinois Licensed Professional Engineer).
- The person who will perform the duties of Project Engineer, that individual in charge who is directly involved in the development of the contract documents (must be an Illinois Licensed Professional Engineer).
- The person who will perform the work in the area of structure plan preparation documents (must be an Illinois Licensed Structural Engineer). In addition, the staff performing this work must be identified.
- The person who will perform/supervise the work in the area of drainage calculations and preparation of the Drainage Report (must be an Illinois Licensed Professional Engineer).

For projects without Structures:

- The person who will perform the QC/QA review work of all milestone submittal documents (must be an Illinois Licensed Professional Engineer).

For project with Structures:

- The person who will perform the QC/QA review work of all milestone submittal documents (must be an Illinois Licensed Professional Engineer for roadway work and must be an Illinois Licensed Structural Engineer for structural work with adequate plan review experience).

For Environmental projects:

- The Environmental Lead, who will be responsible for the day-to-day management of the environmental work effort, and persons responsible for all environmental disciplines including air quality, water quality, traffic noise, socio-economics and ecology.

For Phase III Construction Inspection projects, use the following:

- The Liaison Engineer.
- The Materials Coordinator.
- The Documentation Technician. (The person actively performing the documentation on the project must possess a current IDOT Construction Documentation certificate.)
- The Materials QA Technician.
- The Survey Chief.

There may be other key staff that need to be identified, but these are the ones most typically used.

Projects involving Location Design Studies, Reconstruction/Major Reconstruction, and New Construction/Major Reconstruction, and all Environmental Reports require the completion of Exhibit B which is stated in the Instructions for Submitting SOI's. If the district requests experience in other categories use the following:

EXAMPLE: List experience of the staff and/or firm in accomplishing Highway, Structures Complex projects. Do not list more than five projects.

Prequalification Categories: The prequalification categories listed for the prime should be the categories required to do the major portion of the work. **(Bold prequalification categories.)** Firms must be prequalified in **Drainage** and **Lighting** to be considered for this project.

Land Survey work required under a Phase I and/or Phase II project should be considered carefully. If the district determines it needs to be done by the prime it should be listed as **Land Surveys** under the prequalification categories. If it (or another category) may be subbed out, add the following sentence: Firms must also be prequalified in **Land Surveys** (or subcontract the Land Surveying work to a firm that is prequalified in this category).

Until the policies are revised, include the following paragraph for projects requiring Simple Environmental Assessment and/or Complex Environmental Assessment:

The prime Consultant must be prequalified in **Environmental Reports (Simple** or **Complex Environmental Assessment)** and must perform all of the environmental work using staff that has been presented in your most recently approved Statement of Experience and Financial Condition or your firm may use a single subconsulting firm that is prequalified in **Environmental Reports (Simple** or **Complex Environmental Assessment)** to perform all of the environmental work. The subconsultant's staff must be the same as presented in their most recently approved Statement of Experience and Financial Condition.

Last statement: The clause "including resumes of the key people noted above," is included only when applicable. Statements of Interest, including resumes of the key people noted above, must be submitted concurrently to the Central Bureau of Design and Environment and the District Engineer in District Twenty.

Sample Advertisement #1

Job No. D-91-109-00. FAI 57 from I-80 to the Little Calumet River. Cook County. District One.

This project requires 15.00% DBE participation.

The **Complexity Factor** for this project is **0.003**.

The Consultant who is selected for this project is scheduled to attend a negotiation meeting on **June 19, 2000** at **9:00 A.M.** at the District One Office in **Schaumburg**.

Phase II engineering services are required for the preparation of contract plans, estimates and special provisions for the resurfacing of I-57 from I-80 to the Little Calumet River (10.6 kilometers) and include the rehabilitation of eleven (11) structures. The Consultant's work will include the preparation of contract plans, specifications and estimates including pick-up survey, type, size and location and structure plans, highway drainage design, traffic staging plans, traffic sign modifications, lighting plans, guardrail and barrier modifications, and all other work required to complete the project. All work will be in metric units.

The construction of the rehabilitation of I-57 will be completed in two phases. Phase I will consist of the rehabilitation of northbound I-57 and Phase II will consist of the rehabilitation of southbound I-57. In general, each phase will consist of closing the structures one-half at a time and maintaining two lanes of traffic. A separate set of plans will be required for each phase.

Bridge deck removal and replacement and substructure rehabilitation are the anticipated scope of work for the following structures:

- N.B. I-57 over Little Calumet River/Thornton Road (S.N. 016-0060)
  This structure is a four (4) unit multi span structure (14 spans), 17.68 m wide and 311.33 m long.

- S.B. I-57 over Little Calumet River/Thornton Road (S.N. 016-1061)
  This structure is a three (3) unit multi span structure (12 spans), 17.18 m wide and 303.14 m long.

- N.B. & S.B. I-57 over 143rd Street and Railroad (S.N. 016-0058 & 016-0059)
  Both structures are two (2) unit multi span (five and three span) structures, 16.62 m wide and 280.24 m long.

- N.B. & S.B. I-57 over Dixie Highway (S.N. 016-0056 & 016-0057)
  This is a three (3) span structure with a suspended center span. The roadway width for northbound and southbound is 20.12 m and 17.68 m, respectively. Both structures are 73.4 m long.

- N.B. & S.B. I-57 over 147th Street (S.N. 016-0054 & 016-055)
  This is a three (3) span structure with the center span cantilevered into the end spans. The roadway width is 17.68 m and both structures are 61.98 m long.

- N.B. & S.B. I-57 over 149th Street (S.N. 016-1051 and 016-1012)
  This is a single span structure varying in width from 20.12 m to 26.33 m and is 12.5 m long.

- 167th Street over I-57 N.B. & S.B. (S.N. 016-2125)
  This structure is a two (2) span structure with vaulted precast prestressed end spans. The roadway is 26.37 m wide and the structure is 100.2 m long.

The Consultant will be required to prepare the roadway portion of the plans using MicroStation and GEOPAK software as utilized by the department.

The department will furnish the Consultant with the Design Report, Bridge Condition Report, available microfilm plans, available soils information, right-of-way plans and all available survey information.

The plans for Phase I will be completed by July 31, 2001 and Phase II will be completed by May 1, 2002. The estimated construction cost of this project is $25,000,000.

Key personnel listed on **Exhibit A** for this project must include:

- The person who will assume the duties of Project Manager for all aspects of the work documents (must be an Illinois Licensed Professional Engineer).

- The person who will perform the duties of Project Engineer, that individual in charge who is directly involved in the development of the contract documents (must be an Illinois Licensed Professional Engineer).

- The person who will perform the work in the area of structure plan preparation documents (must be an Illinois Licensed Structural Engineer). In addition, the staff performing this work must be identified.

- The person who will perform/supervise the work in the area of drainage calculations and preparation of the Drainage Report (must be an Illinois Licensed Professional Engineer).

- The person who will perform the QC/QA review work of all milestone submittal documents (must be an Illinois Licensed Professional Engineer for roadway work and must be an Illinois Licensed Structural Engineer for structural work with adequate plan review experience).

Firms must be prequalified in **Highways (Freeways)** and **Structures (Highway: Typical)** to be considered for this project.

Statements of Interest, including resumes of the key people noted above, must be submitted concurrently to the Central Bureau of Design and Environment and the District Engineer in District One.

Sample Advertisement #2 (requiring Environmental Prequalification)

Job No. D-92-101-00, US 20 (FA 401), East of IL 26 to East of IL 75, Stephenson County, District Two.

This project requires 10.00% DBE participation.

The **Complexity Factor** for this project is **0.003**.

The Consultant selected for this project is scheduled to attend a scope of services meeting on **June 21, 2000** from **10:00 A.M.** to **4:00 P.M.** at the District Two Office in **Dixon**.

Phase I and II engineering services are required for the preparation of a reevaluation of the original Environmental Impact Statement, upgrading the original interchange design studies and preparing contract plans for upgrading a partially constructed expressway to a completed freeway on US 20 (Freeport Bypass) northeast of Freeport. All plans will be completed in English units and all NEPA documents must be in dual units.

The location of the Phase II plan preparation and all required right of way documents is along US 20 for a distance of approximately 3.6 miles from east of the existing IL 26 interchange through the partially constructed IL 75 interchange, all on an existing expressway alignment. The project will include preparation of grade separation type, size and location drawings, updated interchange design studies, necessary drainage studies and contract plans, special provisions and estimates for the completed freeway. Type, size and location drawings are required for the following structures:

- Tower Road over US 20 (New Structure)
- US 20 over IL 75 (Interchange Design)

A complete survey of the project will be provided to the Consultant. The Consultant's work will include basic data collection, preparing/updating of environmental technical studies and all other work required to reevaluate the original Environmental Impact Statement (EIS) from Business US 20 east of Freeport to IL 26.

The Consultant is to prepare the plans using MicroStation and GEOPAK software as utilized by the department.

The department will furnish the Consultant with any available as-built plans, microfilm plans, field notes, traffic information, accident statistics, agency coordination, the approved Design Report and Environmental Impact Statement, the existing right-of-way plats, boring logs and pavement design.

The project is currently scheduled for construction in FY 2004.

The estimated construction cost for this project is $12,000,000. The Consultant's work will include the preparation of contract plans. This contract must be completed within 18 months after authorization to proceed.

Key personnel listed on **Exhibits A** and **B** for this project must include:

- The person who will assume the duties of Project Manager for all aspects of the work (must be an Illinois Licensed Professional Engineer).

- The person who will perform the duties of Project Engineer, that individual in charge who is directly involved in the development of the contract documents (must be an Illinois Licensed Professional Engineer).

- The person who will perform the work in the area of structure plan preparation (must be an Illinois Licensed Structural Engineer). In addition, the staff performing this work must be identified.

- The person who will perform/supervise the work in the area of drainage design and preparation of the Drainage Report (must be an Illinois Licensed Professional Engineer).

- The person who will perform the QC/QA review work of all milestone submittals (must be an Illinois Licensed Professional Engineer for roadway work and must be an Illinois Licensed Structural Engineer with adequate plan review experience for structure work).

- The Environmental Lead, who will be responsible for the day-to-day management of the environmental work effort, and persons responsible for all environmental disciplines including air quality, water quality, traffic noise, socio-economics and ecology.

Firms must be prequalified in **Location/Design Studies (New Construction/Major Reconstruction)**, **Environmental Reports (Complex Environmental Assessment)**, **Highways (Freeways)** and **Structures (Highway: Advanced Typical)** to be considered for this project.

The prime Consultant must be prequalified in **Environmental Reports (Complex Environmental Assessment)** and must perform all of the environmental work using staff that has been presented in your most recently approved Statement of Experience and Financial Condition or your firm may use a single subconsulting firm that is prequalified in **Environmental Reports (Complex Environmental Assessment)** to perform all of the environmental work. The subconsultant's staff must be the same as presented in their most recently approved Statement of Experience and Financial Condition.

Statements of Interest, including resumes of the key people noted above, must be submitted concurrently to the Central Bureau of Design and Environment and the District Engineer in District Two.

EXHIBIT 2

COMPLEXITY FACTORS

The complexity factor is given for each Item in the Professional Transportation Bulletin. The complexity factor may not be the same for each phase on multi-phase projects. The complexity factor set for the project or phase will also apply to subcontracted work. The published complexity factor is not open to negotiation.

LOW COMPLEXITY * DLM (R=0) ** CPFF (R=0)	MEDIUM COMPLEXITY DLM (R = 0.003) CPFF (R = 0.035)	HIGH COMPLEXITY DLM (R = 0.008) CPFF (R = 0.07)
Location/Design Report (Rehabilitation)	Location/Design Report (Reconstruction/Major Rehabilitation)	Location/Design Report (New Construction/Major Reconstruction)
Simple Environmental Assessment	Complex Environment Assessment	Environmental Impact Statement
Small Rural Projects	Small Urban Projects	Major Urban Freeways
Surveys	Freeways	Multi-level Interchanges
Roads and Streets	Freeway Interchanges	
	Projects on New Alignment	
Highway Structures: Simple	Highway Structures: Typical	Highway Structures: Advanced Typical
Construction Engineering (Rural Freeway)	Railroad Structures	Highway Structures: Complex Major River Bridges
Traffic Signals	Construction Engineering (Urban Freeway & Major Structures)	
Location Drainage Studies		
	Traffic Signals (SCAT)	Movable Bridges
	Hazardous Waste	Major Engineering Studies Requiring Special Expertise
Lighting		Traffic Signals with Railroad Interconnect
Aerial Mapping		
Asbestos Abatement		
Pumping Stations	Hydraulic Reports, Waterways: Typical	Hydraulic Reports, Waterways: Complex
Subsurface Utility Engineering (SUE)	Hydraulic Reports, Pump Stations	
	Quality Assurance: Typical	Quality Assurance: Complex
	Bituminous Mix Designs: Typical	Bituminous Mix Designs: Complex
	Geotechnical Engineering: Typical	Geotechnical Engineering: Complex

*DIRECT LABOR MULTIPLE PROJECTS (DLM)
(3 + R) DL + DC = Total Project Cost (other than PE III)
(2.8 +R) DL + DC = Total Project Cost (PE III)

**COST PLUS FIXED FEE PROJECTS (CPFF)
DL + OH + DC + FF = Total Project Cost
FIXED FEE OR PROFIT (FF)
0.145 [DL + R (DL) + OH (DL) + In-house DC]

WHERE: DC = Direct Cost
R = Complexity Factor
DL = Direct Labor
OH = Overhead

EXHIBIT 3

WHERE TIME IS NOT CRITICAL

SUBJECT: PRELIMINARY ENGINEERING
Agreements
Phase
Route:
Section:
County:
Job No:
Project: (if applicable)
Contract No:
PTB No.:

Consultant's contact
Consultant's Name
Address

Dear *(Consultant Contact)*:

This letter is *(a follow-up to a phone conversation/fax regarding)*;*(to inform you of)* an error/omission discovered in the plans for the subject improvement. The error/omission is *(describe the nature of error/omission and where it is located within the plans)*. Additionally, we are asking you to *(explain the actions sought from the consultant)*. A response to this request is required by *(insert date)*.

Any additional costs incurred by the Department resulting from the aforedescribed error/omission may be the responsibility of your firm and reimbursement may be requested. A letter outlining the additional costs/damages along with an invoice will be sent to you at a later date if the error/omission is determined to be your firm's responsibility. If the error/omission is determined not to be the responsibility of your firm, you may submit an invoice for costs incurred during the investigation and recommendation of corrective action.

If you have any questions/concerns regarding this matter, please contact *(district contact person for the project)* at *(phone number)*.

Vty

DE

By
PDE

8-6(12)

WHERE TIME IS CRITICAL

SUBJECT: PRELIMINARY ENGINEERING
Agreements
Phase
Route:
Section:
County:
Job No:
Project: (if applicable)
Contract No:
PTB No.:

Consultant's contact
Consultant's Name
Address

Dear *(consultant contact)*:

This letter is *(a follow-up to a phone conversation/fax regarding)*;*(to inform you of)* an error/omission discovered in the plans for the subject improvement. The error/omission is *(describe the nature of error/omission and where it is located within the plans)*.

Time constraints required the Department to take immediate corrective action. The actions taken *(describe corrective measures/actions)*.

Any additional costs incurred by the Department resulting from the aforedescribed error/omission may be the responsibility of your firm and reimbursement may be requested. A letter outlining the additional costs/damages along with an invoice will be sent to you at a later date if the error/omission is determined to be your firm's responsibility. If the error/omission is determined not to be the responsibility of your firm, no further action is required on your firm's behalf.

If you have any questions/concerns regarding this matter, please contact *(district contact person for the project)* at *(phone number)*.

Vty

DE

By
PDE

Chapter Nine

RESERVED

CHAPTER NINE

RESERVED

Chapter Ten

RESERVED

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

CHAPTER TEN
RESERVED

Chapter Eleven

PHASE I STUDIES

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

Chapter Eleven
PHASE I STUDIES

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CHAPTER ELEVEN
PHASE I STUDIES

Chapter 11 discusses the goals and objectives of Phase I studies for projects administered by the Department. Phase I studies include both engineering and environmental studies, each requiring a separate decision-making process. Chapter 12 discusses the content and format of Phase I engineering reports. For the engineering and environmental analyses and any public involvement conducted in a Phase I study, Chapter 11 references the applicable chapters in the *BDE Manual* and other applicable documents (e.g., other Department manuals, FHWA publications).

11-1 GENERAL

11-1.01 Phase I Studies

11-1.01(a) Scope

Phase I work can vary from a very minor type study to an in-depth investigation of corridors, alternative alignments and cross sections, different highway types, and other design features with consideration of social, economic, environmental, and engineering factors. Also safety, serviceability, and economy must be considered during project development. The Phase I study should clearly describe the need for the improvement and how to implement the improvement in a logical and organized manner.

To effectively analyze a proposed improvement, coordinate and develop Phase I studies concurrently with public involvement activities and any required environmental analyses. The Phase I study will culminate in the completion of a Phase I report that documents the findings of the study. Chapter 12 describes the different types of Phase I engineering reports.

11-1.01(b) Purpose

Phase I studies are developed to ensure that, as practical, highway locations and proposed designs are consistent with Federal, State, and local goals and objectives. Consider the following when performing a Phase I study:

1. Design Uniformity. When conducting Phase I studies, ensure that proposed improvements will satisfy a need, are designed and constructed according to IDOT policies and criteria, and that uniform designs are used Statewide.

2. Public Involvement. Develop the final design in conformance with the public involvement requirements of Chapter 19.

3. Public Interest Considerations. Make final project decisions in the best overall public interest. A Phase I study should fully consider the need for safe and efficient transportation, public services, and the costs of eliminating or minimizing adverse impacts to the social and natural environment.

4. Adverse Effects of Project. Ensure that the potential adverse economic, social, and environmental effects of any proposed action have been fully considered. See Part III, Environmental Procedures.

11-1.01(c) Types of Phase I Studies

For major and/or complex projects, a separate corridor and design study may be required to determine the location and design of a proposed improvement. However, for minor type improvements only a separate Phase I engineering study is required. Depending upon the complexity and potential impact of a proposed improvement, the following types of Phase I studies are prepared:

1. Corridor Study. A corridor study is required for a major highway project on new location of significant length and where alternative corridors are available. A corridor study will determine, in part, the selection of a specific corridor for the proposed highway. Alternative alignments may be developed within a general corridor location during the corridor study to determine the suitability of that corridor. These improvements typically will have a substantial social, economic, and environmental effect, or they will essentially change the layout or function of connecting roads and streets. The impacts of a major highway project, such as a freeway on new location, also will require the preparation of a separate environmental document (normally an Environmental Impact Statement) to address the environmental issues of both the corridor and subsequent Phase I design studies.

2. Major Design Study. For major highway projects requiring a separate corridor study, a Phase I design study is prepared after the corridor location has been selected and approved. The design study determines, in part, the specific alignments, profiles, and the major design features (e.g., typical sections, location and type of interchanges, road closures) of the proposed highway improvement. Because a separate environmental report is required with this category of work, environmental investigations are initiated during the corridor phase and are completed concurrently with the design study.

3. Combined Design Study (Combined Corridor and Design Study). A combined design study is conducted for a proposed highway project within a predetermined highway corridor or location. The acceptability of the corridor or location usually results from a decision to use the existing highway alignment due to constraints imposed by land use and development or due to the results of prior engineering studies (e.g., a transportation systems plan). For example, the reconstruction of an urban arterial highway requiring additional right-of-way and some business or residential relocations will normally be a

suitable project for a combined design study. Other examples include upgrading an existing two-lane rural highway to a four-lane expressway, the addition of an interchange, or a change in type for an existing interchange. For Federal-aid projects, the Environmental Class of Action Determination (ECAD) checklist form in Section 23-2.01 may be used or a separate environmental document (most often an Environmental Assessment/Finding of No Significant Impact) is prepared to assess the potential environmental and socio-economic impacts.

4. Minor Design Study. For Categorical Exclusion type projects, conduct and document any necessary engineering and environmental analyses to substantiate the Categorical Exclusion determination; see Section 23-1.05. As discussed in Chapter 12, a Project Report, Abbreviated Project Report, 3P Report, or SMART Report will be prepared for this type of project. Examples of highway improvement types normally addressed include:

- bridge rehabilitation or replacement projects,
- intersection improvements,
- most 3R projects, and
- resurfacing of the existing traveled way with no other improvements.

5. Feasibility Study. A feasibility study is typically initiated to assess whether or not a proposed highway improvement warrants further study or whether additional Phase I engineering studies are needed. Feasibility studies typically are conducted to address the following types of questions:

- Will a new four-lane highway or major river bridge promote economic development in a certain region of the State and create more benefits than costs, or would upgrading existing two-lane highways be a better solution for promoting economic development?

- Is a missing link of a four-lane highway causing traffic operational problems which, in turn, are creating a high number of crashes? Would a new four-lane highway or bypass alleviate the problem or would some other type of improvements be more cost effective?

- Would it be possible and cost effective to build a new four-lane highway on new alignment through rugged terrain in comparison to upgrading the existing alignment? Also, what would be the projected benefits?

- Will a new four-lane highway (typically an expressway) promote economic development in a certain region of the State and create more benefits than costs? With this scenario, there may be two closely spaced corridors (10 to 12 miles (15 to 20 km) apart) which tie into the same termini at each end. Both corridors are worthy of consideration for upgrading to a new four-lane highway

and a determination is needed as to which corridor would provide more benefits. The feasibility study provides this answer and also the need as to whether to proceed with location/design study type work in one corridor. However, to proceed with only one corridor, sufficient corridor environmental investigations must be completed, documented, and then carried forth into the location/design study phase.

- Other similar situations where additional information is needed before making a decision to proceed with more detailed engineering studies (e.g., major drainage alternatives, alternate locations for a proposed interchange).

A feasibility study can be similar to a corridor study.

11-1.02 Social, Economic, and Environmental Considerations

Part III, Environmental Procedures, discusses in detail the procedures for evaluating the social, economic, and environmental impacts of proposed actions. Consider the following items when developing a highway improvement:

- effects on regional and community growth;
- conservation and preservation of natural resources;
- public facilities, services, and recreational areas;
- community cohesion;
- displacement of people, businesses, and farms;
- air, noise, and water pollution; and
- aesthetic values.

The depth of environmental analysis will vary depending upon the scope and nature of the project, the stage of project development, and the magnitude of any adverse impacts. For major projects, the district will prepare a separate environmental document; i.e., an Environmental Impact Statement or an Environmental Assessment. For Categorical Exclusion Projects, the Project Report will document the environmental analysis.

11-2 DESIGN AND ENGINEERING CONSIDERATIONS

11-2.01 General

11-2.01(a) Scope

Phase I studies are used to identify the following:

- need for highway improvement,
- capacity deficiencies,
- need to improve safety,
- level of service,
- project termini,
- specific locations,
- design criteria,
- cross section elements,
- horizontal and vertical alignments,
- need for right-of-way,
- hydraulic design (drainage),
- need for intersection design/interchange designs,
- access control features or access management guidelines,
- location of bridge and traffic structures, and
- project costs.

The scope and depth of engineering analyses for Phase I studies will vary depending on the Project Scope of Work. These studies may be less than that required for final plans, but they should be sufficiently accurate to preclude significant design or major cost estimate revisions during final construction plan preparation. When determining the scope, extent, and accuracy needed for a specific engineering study, the effects on adjacent property owners are often a good indicator.

11-2.01(b) Design Policies and Guidelines

One objective of a Phase I engineering study is to compare existing highway features (or topography and land use for possible new highway locations) to current design policies and criteria and then to determine the needed improvements that are cost and safety effective. This requires resourcefulness and engineering judgment in the development of alternatives and the preparation of project designs.

Location/design study personnel must ensure that major design decisions are finalized during the Phase I engineering studies. This minimizes the time and effort needed to prepare design details during final plan preparation in Phase II. Examine and document any design exceptions

from current policies and explain the reasons for the variance; see Chapter 31. A few of the most frequently referenced policies and guidelines are as follows:

1. New Construction/Reconstruction. Part IV, Roadway Design Elements, and Part V, Design of Highway Types, provide cross section and alignment criteria for new construction projects on new location and for reconstruction projects.

2. Rehabilitation, Restoration, and Resurfacing (3R). Chapter 49 presents the Department's 3R criteria for non-freeways, and Chapter 50 presents the Department's 3R criteria for freeways.

3. Intersections/Interchanges. Chapters 36 and 37 provide design guidance for intersections and interchanges.

4. Access Control/Access Management. Chapter 35 presents Department policies and guidelines for the control of access on freeways and expressways and access management principles.

5. Bikeways/Pedestrians. Chapters 17, 48, and 58 present Department policies for the accommodation of bicyclists and pedestrians within the highway right-of-way.

6. Roadside Safety. Chapter 38 discusses the selection and layout of roadside safety appurtenances. The design policies for protective barriers (e.g., median barriers, longitudinal barriers, impact attenuators) included in Chapter 38 are for new construction/reconstruction projects. For 3R improvements, Chapters 49 and 50 present roadside safety design policies.

7. Structures. For the structural design and rehabilitation of existing bridges, the Bureau of Bridges and Structures maintains several manuals for design. For structure geometrics, Chapter 39 documents bridge width and vertical clearance criteria for new construction/reconstruction improvements. Chapters 49 and 50 present geometric design criteria for bridges within the limits of 3R projects.

8. Pavements. Chapters 53 and 54 present information for determining the pavement design for new construction/reconstruction projects and for the rehabilitation of existing pavements.

9. Other Department Publications. The Illinois Department of Transportation publishes and maintains a wide variety of engineering documents in addition to the *BDE Manual*. These address land acquisition, traffic engineering, structural design, hydraulics, materials, and construction. Chapter 60 of the *BDE Manual* briefly describes these publications. As needed, the Phase I designer should review other Department publications for use in project evaluation.

To properly conduct engineering analyses and to develop a functional design, diverse sources of information must be used. This includes contact with Central Office and district bureaus. The designer must be familiar with data available from outside sources and needs to understand how to use the data. Also, the designer must ensure that the scope, extent, and accuracy of the data requested from other sources is commensurate with the intended use of the engineering analysis being performed.

11-2.01(c) Phase I Study Procedures

The successful implementation of a Phase I study will depend upon timely coordination among all parties involved in the process. Chapters 2 and 3 present Phase I Project Development Networks that illustrate the proper interrelationships among the IDOT central office bureaus, the district, resource agencies, and the public for different types of projects. Depending on the scope of the project and design policies used, the Phase I designer should, as practical, use one of these networks.

11-2.02 Need for Highway Improvements

Engineering investigations in a Phase I study must determine if the proposed highway improvement satisfies the need for safe, economical, and efficient transportation and provides other relevant benefits (e.g., traffic benefits, public services, reduction of crashes, pedestrian facilities, transit considerations). The following informational sources are important in establishing the need for the highway improvement.

11-2.02(a) Functional Classification

The Office of Planning and Programming has Department responsibilities for functionally classifying all State highways. For information on functional classification, see the publications *Functional Classification, Federal-aid Systems, and Urban Area Boundaries Procedural Manual* and the *Federal-aid System and Five Year Classification Maps*, available from the Office of Planning and Programming. Section 43-1 discusses the application of the functional classification system in Illinois for geometric design applications. All highway improvements must be compatible with the functional classification of the highway under design. A highway's functional classification and highway type are important factors in determining which design policies and criteria to use and for establishing programming priorities for new construction, reconstruction, or 3R type improvements.

11-2.02(b) Multi-Year Program

The Office of Planning and Programming annually issues the IDOT publication *Guidelines, Criteria, Categorical Allocations, and Revenue Assumptions for Developing the FY___ Multi-*

Year Highway Program. This usually occurs in the spring of each year. This publication includes programming criteria for:

- improvement categories,
- pavement surface conditions,
- deficient bridges,
- safety improvements,
- Interstate rehabilitation,
- widening narrow and rough pavements,
- improving intersections and reducing traffic bottlenecks, .
- new construction/reconstruction of major facilities,
- enhancement projects,
- Congestion Mitigation Air Quality (CMAQ) projects, and
- bicycle accommodation.

The publication also contains criteria for district selection of projects for inclusion in the annual and multi-year programs, such as bridge deficiencies for improvement eligibility when based upon highway classification and average daily traffic.

11-2.02(c) Highway Data Bank

The Office of Planning and Programming, Planning Services Section, is responsible for maintaining and updating the Illinois Roadway Information System (IRIS) and the *Roadway Information and Procedure Manual.* This is accomplished through district office data collection and highway field inventory operations. The Planning Services Section can provide computer-generated route log listings for State routes, local roads, and local municipal streets. The available data is dependent on the highway system. A key route number designates each roadway. The following major items may be obtained:

- administrative classification;
- physical dimensions;
- roadway characteristics;
- traffic data;
- geometric data;
- pavement cross sections, surface type, drainage, and shoulder conditions; and
- bridge inspection and appraisal data.

Additional minor items may also be obtained from IRIS and a listing of those items is shown in the index of the *Roadway Information and Procedure Manual*.

11-2.02(d) Urban Transportation Planning

The urban transportation planning process produces information on local governmental functions in urbanized areas of over 50,000 inhabitants. The Metropolitan Planning Organizations (MPO) administer a continuing, cooperative, comprehensive transportation planning process that results in transportation improvement plans and programs consistent with the planned development of the urbanized areas. This process determines the transportation modal choice. In urbanized areas, Phase I reports should discuss the consistency of proposed improvements with local transportation planning agencies. Major urban freeway improvements shall meet joint FHWA/FTA regulations for major highway improvements in urban areas. The urban transportation planning process also can provide other social-economic-environmental-engineering information for Phase I studies.

11-2.02(e) Traffic-Carrying Capacity

A facility's current and future traffic-carrying capacity is one of the most critical elements for establishing the need for a highway improvement. Two elements impact this analysis:

1. Current and Projected Traffic Volumes. Under the general guidance of the Office of Planning and Programming (OP&P), the districts count and classify existing traffic volumes on the State highway system. OP&P also maintains data used to project future traffic volumes (i.e., annual traffic growth factors). The following data are available from the district offices:

   - current hourly and daily traffic volumes,
   - current turning movement volumes,
   - traffic projections and assignments for new facilities, and
   - traffic projections for future design years on existing facilities.

   Similar data, developed in conjunction with the Urban Transportation Planning Process, also may be obtained from Metropolitan Planning Organizations. Phase I reports should document current year average daily traffic, design year average daily traffic, and design year 30th highest hourly traffic volumes. Also, provide the directional distribution factor and the percent of trucks for the proposed highway and for other affected facilities. Because the design of a project is so greatly dependent upon the projected design hourly volumes, these figures must be carefully examined and questioned before using for design purposes. Improper traffic projections can result in the assumption of unnecessary highway improvements.

2. Highway Capacity Studies. The desired level of service (LOS) (i.e., mobility and freedom from delay and congestion) for a State highway is determined by its functional classification and urban/rural location. The tables of geometric design criteria in Part V, Design of Highway Types, present the Department's LOS criteria for each functional class. The *Highway Capacity Manual* provides the analytical techniques to determine

the level of service for all highway elements (e.g., for basic segments, intersections, interchanges) for a given set of traffic and roadway conditions. For a major highway segment, for example, the capacity analysis will determine if an existing roadway will accommodate future traffic demands at the desired LOS or if roadway improvements are necessary (e.g., the addition of travel lanes). Section 31-4 discusses highway capacity analyses for Department projects in more detail.

11-2.02(f) Crash and Skid Reduction Analyses

The Division of Traffic Safety regularly furnishes the district offices with traffic crash information and provides crash information upon request. The following is a partial listing of available crash information for Phase I studies:

- State highway High-Accident Location (HAL) maps and computer-generated listings that report supplemental data for high-crash spots and roadway sections;
- county crash summaries;
- municipal crash summaries;
- reports which can be generated for individual locations, selected geometric feature, or type of crash:
  - + High Accident Locations (HAL),
  - + Intersection Profile,
  - + Segment Profile,
  - + Location Summary,
  - + Crash — One-Line Listing,
  - + Intersection Summary,
  - + Cross Tab — Time of Day by Severity,
  - + Cross Tab — Crash Type by Severity,
  - + Cross Tab — Conditions by Severity,
  - + Cross Tab — Time of Day by Day of Week,
  - + Roadway Description, and
  - + Roadway Summary;
- Statewide average crash rates (distributed annually for comparison with existing project crash rates for proposed improvement justification);
- collision diagram printouts for requested project locations, including intersections. Coding sheets are available for interpreting collision diagram printouts of vehicle maneuvers and involvements. Collision diagram summary sheets document percentages of collision types (on or off the roadway), weather conditions, and light

conditions. Crash rates also may be requested for specific locations. Sufficient information is included to assist in manually drawing a collision diagram. Collision diagram computer plots also may be requested for intersections;

- individual crash reports at specific locations (upon request from a microfilm or imaging retrieval system);

- wet-pavement crash cluster sites (computer-generated listings); and

- summaries of Motor Vehicle Traffic Crashes and Class of Trafficway (Statewide average percentages) by type of collision, light condition, and road surface (these percentages may be compared with project percentages from collision diagram summary sheets to help identify over-represented crash patterns).

The Phase I study should include, as appropriate, the following crash analyses to assist in demonstrating the need for a highway improvement:

1. Spot Map. Provide a crash spot map as basic crash information in the Phase I report. As applicable, also include a comparison of the calculated project crash rates with the Statewide average crash rates for the same class of highway. Collision diagram summary sheet percentages also may be compared with Statewide averages.

2. High-Crash/Crash Pattern Analyses. In the Phase I study, identify High-Accident Locations (HAL), rates, and all crash patterns (e.g., fixed objects) at various sites throughout the project. Also include schematic collision diagrams, results of field checks, crash analyses, and recommended countermeasures for these items, or provide a statement that no high-crash locations or other crash patterns exist along the proposed improvement.

3. Wet-Pavement Crashes. Identify and analyze any wet-pavement crash clusters in accordance with the *Procedures for Identifying, Analyzing, and Improving Wet-Pavement Accident Locations Within Rehabilitation/Resurfacing Projects.* These procedures are discussed in the *Illinois Safety Improvement Processes Manual* available from the Bureau of Operations. Include friction numbers, if available, in the analysis of critical wet-pavement crash locations combined with the recommended traffic, existing geometric features, grooving, reprofiling, and/or high-friction resurfacing countermeasure alternative(s). Specify a high-friction resurfacing type and mix design during Phase II.

4. Time Period. Analyze the traffic crash data available for the most recent three years and update the data accordingly. Notify BDE of any resultant changes to project design elements, if appropriate.

5. IDOT Procedures. See Chapter 12 for a discussion on processing Phase I reports for the "Highway Safety Program" at isolated High-Accident Locations (HAL) identified and

selected for the Illinois' Safety Program. Include project/program sheets in the Phase I report, with benefit/cost ratio calculations and district safety committee signatures.

6. Other Publications. For additional information on analyzing crash patterns, see the ITE publications *Manual of Transportation Engineering Studies* and *Transportation and Traffic Engineering Handbook* and the FHWA publication *Highway Safety Engineering Studies Procedural Guide*.

11-2.02(g) Pavement Condition

The Condition Rating Survey (CRS) is performed biennially by district offices in cooperation with the Office of Planning and Programming. This information is most often used to determine the extent of pavement rehabilitation for a 3R project. All State highway pavements are rated on a scale from 1.0 (poorest) to 9.0 (best) that measures pavement serviceability based upon cracking, patching, potholes, rutting, deterioration, maintenance, and visual physical condition. Resurfacing and rehabilitation needs may be determined from the surface condition rating in combination with the functional classification criteria and the traffic volume/crash criteria presented in the multi-year program. Include the most recent CRS values for pavement improvement eligibility in the Phase I report. See Chapter 53 for more information on pavement condition surveys and pavement rehabilitation strategies.

11-2.02(h) Bridge Condition Information

For existing bridges within the limits of a proposed project, coordinate with bridge maintenance engineer to obtain information on the bridge condition and to prepare a Bridge Condition Report; see Section 39-3. Identify any deficiencies in a bridge's physical condition and load-carrying capacity. Also, contact the Bureau of Bridges and Structures for inventory and operating load ratings and the results of physical inspection ratings for the substructure and superstructure. Determine any bridge improvement needs from this information and the multi-year program

11-2.03 Access Control/Access Management

Access control features are dependent upon a variety of factors (e.g., type of highway, either freeway or expressway, urban/rural location) and will affect traffic benefits, access to adjacent properties, and right-of-way costs. Proposed access control features for freeways or expressways must be determined for public presentation and discussion because of their effects on adjacent properties. The *BDE Manual* discusses access control elements and access management concepts in several locations. These are summarized as follows:

1. Overall Policy. Chapter 35 presents the overall Departmental policies and guidelines for access control and access management on the State highway system. This includes:

- definitions of access control terms,
- access control at interchange crossroads,
- access control along expressways and at sideroads,
- the development of access control plans, and
- access management concepts and techniques.

2. Highway Type. The tables of geometric design criteria in Chapters 44-48 interrelate access control or access management with highway functional classification (i.e., principal and minor arterials, and collectors). Section 43-1 discusses, in general, the relationship between access, mobility, and functional classification.

3. Median Crossovers and Openings. These are discussed in various locations in the *BDE Manual* as follows:

   - Section 44-2.04 discusses median crossovers on freeways.
   - Chapter 45 discusses median crossovers on expressways.
   - Chapter 46 discusses median openings on Strategic Regional Arterials.
   - Chapters 34 and 36 discuss median openings on all other facilities.

4. Frontage Roads/Service Drives. Frontage roads and service drives and how they relate to access control are discussed in Sections 44-2.05 (freeways) and 45-2 (expressways).

5. Driveways. Locate driveways to provide good service to users while simultaneously minimizing interference to highway traffic. The Bureau of Operations' publication *Policy on Permits for Access Driveways to State Highways* provides guidance for driveway design in conjunction with the permit process and may be used as a starting point for developing access management studies.

6. Changes in Access. For new or revised points of access to an existing freeway, see Section 37-1. For changes in access control along an expressway, see Section 45-2.04.

7. Signing Policies. For the current IDOT policies on signing of access controlled highways, see the Bureau of Operations *Traffic Policies and Procedures Manual*.

11-2.04 Geometric Design Criteria

Parts IV, Roadway Design Elements, and V, Design of Highway Types, of the *BDE Manual* present the Department's geometric design criteria for the different types of highways. This is an important element for all Phase I studies. The following sections briefly summarize the information in Parts IV and V.

11-2.04(a) Basic Design Controls

Chapter 31 discusses the design controls that have an overall impact on the geometric design of a highway facility; therefore, this is an important chapter for Phase I studies. As discussed in Chapter 31 and as appropriate, the designer should evaluate the following:

1. Project Scope of Work. Section 31-6 defines the following project scopes of work:

   - new construction,
   - reconstruction,
   - 3R (non-freeways), and
   - 3R (freeways).

   The project scope of work will be determined before the initiation of a Phase I study. The definitions in Section 31-6 indicate the conceptual objective of the project under study.

2. Design Speed. This is a critical highway design element and is selected before initiating any studies. Section 31-2 discusses the overall philosophy in design speed selection. Chapters 44 through 50 present specific numerical criteria for project design speed based on functional classification, highway type, urban/rural location, and project scope of work.

3. Traffic Volume Analysis. Section 31-4 provides definitions of highway capacity terms and selection of the design year and design hourly volume for highway capacity analyses. It references the *Highway Capacity Manual* for detailed highway capacity techniques.

4. Sight Distances. Stopping sight distance (SSD) is a determining factor in an acceptable highway design, especially for vertical alignment. Section 31-3 presents Department criteria for SSD based on design speed. Other sight distances which may be applicable are:

   - decision sight distance,
   - intersection sight distance, and
   - passing sight distance.

5. Design Exceptions. Section 31-8 describes the Department's process for justifying and approving design exceptions to geometric design criteria for new construction/reconstruction type projects. These criteria can be categorized as follows:

   a. Level One. These are the FHWA's controlling design elements that require concurrence and justification of the design exception when not met (either from FHWA or BDE).

b. Level Two. Design criteria (in addition to the FHWA's controlling design elements) identified by IDOT requiring documentation and justification when not met. These should be discussed at district coordination meetings and documented in the minutes from those meetings. More detailed documentation of Level Two exceptions may be written up by district staff and made a part of the project files.

11-2.04(b) Horizontal Alignment

Chapter 32 discusses horizontal alignment for new construction/reconstruction projects in general. A significant portion of this chapter applies to the Phase II detailed design (e.g., superelevation development, mathematical details for horizontal curves). However, during Phase I studies, the designer should review and evaluate the following based on Chapter 32 and Section 48-5, Urban Highways and Streets:

1. General Design Controls. The overall horizontal alignment of a highway facility impacts the safe and efficient flow of traffic and the aesthetic appeal of the facility. Section 32-5 presents several general design controls for horizontal alignment that will enhance the performance of the highway (e.g., avoidance of alignment reversals and broken-back curvature). The designer should ensure that alignment development is consistent with these goals.

2. Minimum Radii. Section 32-2 presents minimum radii for horizontal curves assuming open-roadway conditions, which applies to high-speed urban facilities and all rural facilities. When developing and evaluating alternative alignments in Phase I, the designer should, as practical, avoid the use of minimum radii. Section 48-5.03 discusses design criteria for horizontal curves for low-speed conditions ($V \leq 45$ mph (70 km/h)).

3. Coordination with Vertical Alignment. See Section 11-2.04(c) and Chapter 33.

11-2.04(c) Vertical Alignment

Chapter 33 discusses vertical alignment for new construction/reconstruction projects. A portion of this chapter applies to the Phase II detailed design (e.g., mathematical details for vertical curves). However, the majority of Chapter 33 applies to the decision-making during Phase I studies. This reflects the significant impact that vertical alignment has on a highway's safety, aesthetics, operations, and costs. Therefore, the Phase I designer must carefully review the following from Chapter 33 before proceeding with alignment development:

1. General Design Controls/Coordination with Horizontal Alignment. Sections 33-6.01 and 33-6.02 present several general design controls for vertical alignment (e.g., avoidance of roller-coaster profile) and in coordination with horizontal alignment (e.g., balance

between horizontal and vertical curvature). Using these controls will enhance the overall design of the highway. The designer should ensure that profile development is consistent with these goals.

2. Aesthetics. The combined effect of horizontal and vertical alignment on highway aesthetics is considered to be very important. A highway alignment should fit gracefully into its surroundings and become an integrated component of the natural landscape. The guidance in Section 33-6.03 describes how to accomplish this objective.

3. Maximum/Minimum Grades. Section 33-2 discusses, in general, the use of maximum and minimum grades. These values determine the limits of vertical profiles studied in Phase I. Avoid the use of maximum grades, as practical. Chapters 44 through 48 present specific criteria for maximum and minimum grades based on highway types, design speed, and urban/rural location.

4. Minimum Vertical Curvature. Section 33-4 presents K-values for minimum curvature at crest and sag vertical curves, which are based on minimum stopping sight distances. When developing and evaluating alternative profiles for new construction and reconstruction projects, the designer should, as practical, avoid the use of minimum vertical curvature.

5. Truck-Climbing Lanes. Section 33-3 presents the warrants and design of truck-climbing lanes. If truck-climbing lanes are warranted, the designer should determine the critical design elements (e.g., starting and ending points, width).

6. Vertical Clearances. Section 33-5 discusses, in general, vertical clearances, and Chapters 39 and 44 through 50 present specific clearance criteria based on highway type, urban/rural location, highway feature crossed (e.g., highway bridges, railroads, traffic signals), and the type of proposed improvement. Profiles must meet the vertical clearance criteria listed in these chapters.

7. Gradelines. In addition to previously discussed elements, the proper selection of the gradeline in Phase I will depend on many other factors (e.g., geotechnical, right-of-way impacts, snow drifting, drainage, earthwork balance). Section 33-6.04 discusses the evaluation of these factors in selecting a profile gradeline.

11-2.04(d) Cross Section Elements

Chapter 34 presents the Department's general criteria for cross section elements, and Chapters 44 through 48 present specific numerical criteria for cross sections based on highway type, design speed, traffic volumes, and urban/rural location. The designer must review the cross section criteria in these chapters and determine the most appropriate design for the given conditions. The selected roadway cross section will determine the type of operations, maximum

allowable design speed, safety, costs, and right-of-way needs of a highway facility. The proposed typical section must identify:

- the number and width of travel lanes;
- the selection of an urban (curbed) or rural section;
- the shoulder width, if applicable;
- cross slopes;
- the type and width of median;
- parking lanes, if applicable;
- sidewalks and bike lanes/paths, if applicable;
- side slope configuration (i.e., fill slopes, cut slopes, roadside ditches);
- right-of-way width; and
- type and thickness of pavement.

11-2.04(e) Intersections

Chapter 36 presents the Department's criteria for the design of intersections. Chapter 14 specifically discusses the warrants and the criteria for the preparation of an Intersection Design Study (IDS). Upon completion of the IDS, it may be approved by the district and forwarded to BDE for final acceptance for inclusion into a Phase I report. Intersection designs must be approved before a public hearing is offered or held.

11-2.04(f) Interchanges

Chapter 37 presents the Department's criteria for the design and layout of interchanges. In some cases, type approval may be required before proceeding with detailed design. Chapter 15 discusses the warrants for an interchange and the criteria for the preparation of an Interchange Design Study (IDS). Upon completion of the IDS, it is approved by the district and forward to BDE for review and approval. Interchange designs must be approved by BDE before a public hearing is offered or held.

11-2.04(g) Roadside Safety

Chapter 38 presents the Department's criteria for roadside safety, including clear zones, barrier warrants, barrier design and layout, impact attenuators, and glare screens. Most of the information in Chapter 38 is applicable to the detailed design completed in Phase II. During a Phase I study, however, the designer should evaluate and establish the following:

1. Clear Zones. Section 38-3 presents the Department's clear zone criteria for new construction/ reconstruction projects. The applicable clear zone should be identified in Phase I. This will determine, in part, right-of-way needs and utility impacts.

2. Median Barrier Warrants. Section 38-7 discusses the Department's warrants for median barriers based on the median width and traffic volumes. The Phase I study should identify whether or not a median barrier is warranted.

3. Roadside Barrier Warrants. Section 38-4 discusses roadside barrier warrants. In general, the preferred design is to provide a roadside configuration and clearance that eliminates the need for roadside barriers. The typical section and alignment decisions made during Phase I must include the determination of the need for roadside barriers. Also, during Phase I a determination of the roadside barrier length may be included. Therefore, the Phase I study should, as practical, seek to find the balance between providing a safe roadside (which tends to increase project costs) and limiting construction, right-of-way, and environmental impacts (which tends to decrease roadside safety). Review Section 38-4.03, which discusses the Department's policies on roadside barrier warrants and cost-effective analyses.

11-2.04(h) Design of Highway Types

Part V, Design of Highway Types, presents the following chapters based on functional classification and highway type for new construction or reconstruction type projects:

- Chapter 44 "Rural and Urban Freeways,"
- Chapter 45 "Expressways,"
- Chapter 46 "Strategic Regional Arterials,"
- Chapter 47 "Rural Two-Lane/Multilane State Highways," and
- Chapter 48 "Urban Highways and Streets."

These chapters are structured to present specific numerical criteria for each highway type and reference the chapters in Part IV, Roadway Design Elements, for detailed information on specific geometric design elements (e.g., horizontal alignment). Chapters 44 through 48 also discuss geometric design features that are unique to a certain type of facility. For example, Chapter 44 discusses frontage roads adjacent to freeways, and Chapter 48 discusses urban design features (e.g., parking lanes, sidewalks, horizontal alignment on low-speed urban streets).

In the Phase I study, use the appropriate chapter in Part V that corresponds to the type of facility under design.

11-2.04(i) Design of 3R Projects

The applicable chapters in Part IV, Roadway Design Elements, and Part V, Design of Highway Types, present the Department's design criteria which apply to new construction/reconstruction projects. For these projects, the designer often has the liberty of designing the highway to meet

the most desirable criteria. However, available finances do not always permit the reconstruction of existing highways to this level.

Therefore, the geometric design of projects on existing highways must be viewed from a different perspective. These projects are often initiated for reasons other than geometric design deficiencies (e.g., pavement deterioration and crashes), and they often must be designed within existing right-of-way, with financial limitations, and environmental constraints. As a result, the design criteria for new construction and reconstruction are often not attainable without major cost and, frequently, adverse impacts. At the same time, however, the Department must make cost-effective and practical improvements to existing highways and streets.

For these reasons, the Department has adopted separate geometric design guidelines for 3R projects on existing highways. Chapter 49 presents guidelines for 3R projects on rural and urban highways, and Chapter 50 presents guidelines for 3R freeway projects. These guidelines are intended to find a balance among many competing and conflicting objectives. These include the objective of improving the riding surface; minimizing adverse impacts of highway construction on adjacent lands; and improving the greatest number of miles (kilometers) with available funding.

Phase I studies for 3R projects will be based on the guidelines discussed in Chapters 49 and 50.

11-2.04(j) Design of 3P and SMART Projects

See Chapters 12 and 53 for resurfacing guidelines and report preparation for these type projects.

11-2.05 Hydraulics (Drainage)

For the hydraulic evaluations in conjunction with a Phase I study, use the following references:

1. *IDOT Drainage Manual*. The Bureau of Bridges and Structures is responsible for the *Drainage Manual*. The *Manual* is a compilation of Department policies and criteria on drainage and hydraulics for road and bridge projects. The *Drainage Manual* discusses:

    - division of responsibility for drainage;
    - legal requirements;
    - drainage policies;
    - permits;
    - preparation of drainage studies and hydraulic reports;
    - flood plain encroachments (hydraulic analysis);
    - hydrology;
    - open channel flow;

- culvert hydraulics;
- bridge hydraulics;
- storm sewers;
- encroachment onto traveled way adjacent to curb and gutter;
- inlet spacing;
- roadside ditches;
- erosion and sediment control;
- scour;
- detention storage;
- pumping stations; and
- rules for construction in rivers, lakes, and streams.

2. Drainage Procedures. Chapter 40 of the *BDE Manual* discusses those procedures related to the evaluation of drainage design in a Phase I study. This includes the division of responsibility between the districts and Central Office, scope of the Drainage Study, and general drainage considerations in the design of highway projects.

3. Flood Plain Finding. Section 26-7 of the *BDE Manual* expands on the requirements of Executive Order 11988, which applies to Federally funded/regulated projects when the project will involve a flood plain encroachment. Section 26-7 presents six categories of potential impacts on flood plains and discusses the necessary depth of analysis for each category.

4. Hydraulic-Related Permits. These include permits for Section 404, Section 9, Section 401, Section 402 (NPDES) and IDNR Construction in Floodways. Chapter 28 of the *BDE Manual* briefly discusses each of these permits.

11-2.06 Traffic Engineering

The Bureau of Operations has the primary responsibility for traffic engineering analyses on State highway projects. These responsibilities include:

- warrants and phasing for traffic signals;
- warrants, design, and placement for highway signs and pavement markings; and
- traffic engineering investigations (e.g., speed studies, school zone studies).

Many traffic engineering elements are addressed during detailed design in Phase II (e.g., selection and location of traffic signs and pavement markings). However, as appropriate for the project scope of work and a Phase I study, the designer will evaluate those traffic engineering factors which will impact the decision-making in Phase I (e.g., traffic signal warrants, preliminary signing plans for freeways and expressways). Chapter 57 of the *BDE Manual* provides guidance on traffic engineering issues important to highway design, and it references documents published by the Bureau of Operations for more detailed information.

11-2.07 Structures

The Bureau of Bridges and Structures is responsible for the design of highway structures (e.g., bridges, culverts, retaining walls). As appropriate for the project scope of work and a Phase I study, the designer will evaluate those structural factors that are appropriate for these studies. Section 39-3 of the *BDE Manual* discusses the bridge planning process, which documents:

- the necessary coordination between parties to identify needed bridge improvements,
- the preparation of a Bridge Condition Report and proposed Bridge Drawing,
- preliminary bridge investigations, and
- the preparation of Type, Size, and Location Plans for Phase II work.

The proper implementation of the bridge planning process will ensure that appropriate structural considerations are reflected in a Phase I study. This includes geotechnical, hydraulic, environmental, right-of-way, costs, and aesthetic factors. In addition, Section 39-4 presents the Department's criteria for bridge geometrics (e.g., widths, clearance).

11-2.08 Miscellaneous Highway Features

The Phase I study should reflect, as appropriate, other highway features as follows:

1. Utilities. See the publication *A Policy on the Accommodation of Utilities on Rights-of-Way of the Illinois Highway System* (contact the Bureau of Operations) for policies on the location of utilities (e.g., with respect to the roadside clear zone). Consider provisions for utilities when determining approximate project right-of-way requirements during the Phase I study. See Chapter 6 for utility adjustments required for highway improvements. Describe all utility locations and any proposed modifications, changes, or multiple uses of right-of-way, including a division of the estimated adjustment costs.

2. Railroads. The Phase I study must identify all railroad crossings within the proposed project limits, and it must determine if each crossing will be at-grade or grade separated. This will be a collaborative effort between the Department, the affected railroad, and the Illinois Commerce Commission. For existing crossings, the Phase I report should document the number of trains/day, the existing warning devices, the crash history, and the geometrics at the crossing. In most cases for at-grade crossings, it will be appropriate in Phase I to specifically determine the type of warning devices at the crossing (e.g., automatic gates, flashing signals). Section 7-3 provides additional information on the design of highway/railroad crossings.

3. Weigh Stations and Rest Areas. See Chapter 16 for guidance when a proposed project involves a weigh station or rest area. Analyze access and other design considerations (including affects on highway alignment and grade) where weigh stations, rest areas, or rest stops are proposed.

4. Lighting. Consult Chapter 56 for warrants for highway lighting and illumination. Describe existing and proposed illumination levels including uniformity ratios and glare levels. Provide descriptions of crash rates, night/day crash ratios, and illumination of adjacent highway sections, as necessary, to demonstrate the need for proposed lighting improvements.

5. Sidewalks and Pedestrians. See Chapter 17 for information on pedestrian accommodations and Chapter 48 for warrants and the design of sidewalks within the roadway cross section. Also, see Chapter 39 for sidewalks or bikeways on bridges. Describe the reasons for providing (or not providing) sidewalks and the coordination needed with local governmental units. See Chapter 58 for additional discussion on sidewalks and ADA compliance. The Phase I report must discuss any requests and the justification for deviations from the participation policies for sidewalks as discussed in Chapter 5 on Local Agency Agreements.

6. ADA. Chapter 58 discusses the Department's implementation of the *Americans with Disabilities Act* (ADA). The Phase I report must contain a discussion on satisfying ADA requirements including, if applicable, the coordination with local officials on the selection of accessible routes for disabled individuals. Any Intersection Design Study (see Chapter 14) prepared in Phase I must indicate the location of the curb-cut ramps to be provided. The Phase I report must discuss any request for a design exception from Department policies on accommodating disabled individuals and the justification for the request. The request must discuss the impact on the access route.

7. Landscaping/Erosion Control. Consult the District Landscape Architect for tree removal/replacement, revegetation/erosion control, and other landscaping features and document the recommendations in the Phase I report. To avoid duplication, reference information contained in environmental documents that has been developed according to Part III, Environmental Procedures, (e.g., environmental commitments). Also, review Chapter 59 for guidance on landscaping and erosion control.

11-2.09 Maintenance Considerations

See the FHWA publication *Integration of Maintenance Needs Into Preconstruction Procedures*, Report No. FHWA-TS-77-216, for information on highway maintenance as it pertains to highway design. The section of this publication entitled "Maintainability Considerations in Highway Planning" provides guidelines for highway maintenance considerations related to highway location, right-of-way, and geometrics. Also, see NCHRP Report 349, *Incorporation of Maintenance Considerations in Highway Design.* In addition, develop Phase I studies in cooperation with bridge and highway maintenance personnel who are responsible for the highway section under design.

11-2.10 Geotechnical Considerations

See the IDOT *Geotechnical Manual* for information on geotechnical considerations. The Bureau of Materials and Physical Research maintains this Manual. The following applies:

1. Chapter 1 "Geotechnical Investigations" and Chapter 3 "Geotechnical Analysis". These chapters provide guidelines to adequately assess the subsurface conditions on highway projects and to identify the soil and foundation concerns that need to be evaluated for structural support. This information facilitates preliminary highway location or design and can assist in determining the economies of various alignments considering soils and geology. Upon determining the general alignment, the data also assists in selecting the proposed gradeline.

2. Chapter 4 "Design Recommendations". This chapter describes design recommendations and reflects the conclusion of field and laboratory investigations and any office work. The conclusions are documented in a Geotechnical Report. The Soils Committee reviews district- or consultant-prepared Geotechnical Reports for proposed highway improvements. The district initiates the requests for reviews.

Conduct Phase I studies in cooperation with soils specialists and geologists when these disciplines influence the location and/or design of a proposed improvement. Also, the location of foundations for structures or high embankments may be an important item in the highway location.

11-2.11 Agreements

Consult with the Agreements Unit in BDE during the preparation of Phase I studies to determine if any agreements will be necessary. Depending upon the nature of the project, one or more of the following agreements may be necessary:

1. Local Agency Agreements. In general, Agreements will be required with a local agency whenever it will participate in the improvement of a State route within its boundaries. Local agency participation may be a contribution of materials, services, or money (e.g., right-of-way, preliminary engineering, local funds). Although the Agreements Unit has the primary responsibility for processing local agency Agreements after design approval, some Agreements may depend in part upon decisions reached during the Phase I study. See Chapter 5 for information on local agency Agreements. The Agreement, or Letter of Understanding, also will define the division of costs between the State and local agency and the respective responsibilities for a variety of project elements and any maintenance or jurisdictional transfers.

2. Utility Agreements. A Utility Agreement will be necessary on all State highway projects that require an adjustment of a public or private utility. Chapter 6 documents the policies and procedures that apply to utility adjustments on Department projects. This chapter

discusses Department reimbursement policies, procedures for Agreement processing, the preparation of utility plans, and the preparation of cost estimates for utility adjustments.

3. Railroad Agreements. A Railroad Agreement will be necessary on all State highway projects that impact railroad right-of-way, either at a highway-railroad grade crossing or a grade-separation between a highway and railroad. Chapter 7 documents the policies and procedures for work that impacts railroad right-of-way. This chapter also discusses divisions of costs between the Department and Railroad, procedures for processing the Agreement, and other activities related to railroads (e.g., removing abandoned highway-railroad crossings, preliminary engineering for design, acquisition of railroad property).

The Phase I report should document the reasons for any deviations from current Department policies for these Agreements, and it should describe the necessary coordination with the district and other affected entities. In addition, discuss the coordination with local officials, utility companies, and railroads that might affect the preparation of any Agreements. Develop cost estimates for the Phase I study consistent with the division of costs between the State and other entities involved in the work. Also, describe any commitments made with the local agency, utility companies, or railroad.

11-2.12 Right-of-Way Issues

The district Land Acquisition Section develops preliminary right-of-way cost estimates and relocation assistance plans as necessary and in accordance with the *Land Acquisition Policies and Procedures Manual*.

Right-of-way costs are determined on a per acre (hectare) basis or on a parcel-by-parcel basis and include costs for displaced persons as a result of a proposed highway improvement. For major projects, a preliminary relocation plan is developed to estimate housing needs and available resources for persons displaced by a highway project. The steps in the land acquisition process are shown in the *Land Acquisition Manual*.

When publicly owned facilities will be acquired, a decision should be made at the completion of the Phase I study to either pay the market value for the property or to functionally replace it. The guidance on this issue is in the *Land Acquisition Manual*.

See Section 34-5 when laying out highway alignments. This section provides guidance on right-of-way issues that could avoid adverse property severance, undesirable access features, unnecessary damages, and odd-shaped takings. Also, consider existing property lines and the value of property to avoid excessive right-of-way costs. Often, alternative locations and designs can be selected with lower right-of-way costs.

11-2.13 Coordination With Airports

Highway and bridge improvements within 2 miles (3.2 km) of publicly owned airports, within 1 mile (1.6 km) of privately owned airports open to the public, and within 0.5 miles (0.8 km) of restricted-landing areas will require coordination with the Illinois Division of Aeronautics. These coordination requirements concerning distance to an airport are in conjunction with height obstructions of 15 ft (4.6 m) or more above the roadway. In addition, the district must coordinate with the Division of Aeronautics for all realignments and construction improvements on new location regardless of the height of obstruction.

Airport clearance requirements could affect the controlling elevations and locations of pavements and structures. Discuss the necessary construction equipment (e.g., cranes, pile drivers) and highway appurtenances (e.g., signs, lighting, traffic signals, utility poles) that might affect airspace clearances. During preparation of the Phase I study, also contact the local airport authorities to ascertain that any proposed airport expansion plans will not cause the highway improvement to conflict with future airspace clearances.

For those airports that are publicly owned, coordination with the Federal Aviation Administration (FAA) is required. Contact the Division of Aeronautics prior to communicating with the FAA.

The Phase I report must include a discussion as to whether or not any airports exist within the distance requirements set forth above and if any obstructions will exist due to highway improvements. Any required vertical clearance permits must be obtained prior to PS&E approval. Airspace clearances are defined by the Division of Aeronautics in Title 92 *Illinois Administrative Code, Part 14, Aviation Safety*.

11-2.14 Traffic Control During Construction

The Phase I study must include a discussion on or development of a conceptual plan to accommodate traffic during construction. The following references are applicable:

1. Work Zone Traffic Management Studies. Chapter 13 documents the goals and objectives for developing a Traffic Management Analysis (TMA) report. Each Phase I report should contain a TMA indicating an overall strategy for accommodating traffic during construction. The TMA usually will be approved as part of a Phase I report and the decisions made in the TMA will be used to prepare the detailed Traffic Control Plan (TCP) during Phase II work.

2. Work Zone Traffic Control. Chapter 55 presents detailed design criteria for accommodating traffic in a work zone (e.g., geometric design, roadside safety). During the Phase I study, the designer will need to review Chapters 13 and 55 to determine the appropriate design features for different methods of accommodating traffic during construction.

11-2.15 Estimate of Costs

At the completion of a Phase I study, prepare a cost estimate for the project. This cost estimate is used during the programming process at both the district and Central Office levels to determine a realistic annual construction budget. To accomplish this for major projects requiring more than one construction season, provide cost estimates for individual usable segments. The multi-year highway improvement program can then be developed using the individual segment costs rather than an estimated proportional cost of the total project.

Sections 12-4 and 65-1.02 discuss the information needed to document project costs. Typical cost estimate sheets for minor and major Phase I projects are shown in Section 12-4. To provide statewide uniformity of items used in estimating costs, the designer should use these typical cost estimate sheets in Phase I reports.

11-3 ROUTE PLANNING

11-3.01 Scope

Route planning is the general term used for locating and selecting a design for a major highway facility on new alignment or, in some cases, along an existing highway. Route planning is typically accomplished by the Office of Planning and Programming and is conducted 10 to 15 years prior to a corridor study analysis. Typical examples where route planning would apply are with freeways, expressways, and bypasses. It involves the consideration of engineering, sociological, environmental, and economic elements. Proper planning will determine the traffic needs and the type of facility required to satisfy those needs. After this determination has been made, a study area and area of influence can be selected, and corridors within the study area can be proposed and investigated.

After selection and approval of a corridor, a Phase I study may be initiated and alternative alignments within the corridor may be developed to determine the optimum project design. During detailed project development, consider the requirements in Chapter 19 (public involvement) and Part III, Environmental Procedures.

11-3.02 Logical Termini

Phase I studies for major projects as listed above should span a route length that extends to logical termini. Also, ensure that the study addresses the social, economic, and environmental impacts of the ultimate improvement and provides for a uniform set of design criteria between logical termini.

Logical termini generally consist of population centers, major traffic generators, major crossroads, and other features that serve as a destination, either intermediate or final, for a significant portion of the traffic likely to use the route being considered for improvement. Consider the following when determining logical termini:

1. Population Centers. Population centers, typically considered as logical termini, will vary considerably in size. They may be defined, however, as those cities, towns, or villages that serve as trade or business centers in the geographical area where the improvement is located.

2. Major Traffic Generators. Major traffic generators are those shopping districts, factories, employment centers, recreational facilities, and other developments that serve as a destination for a significant portion of the traffic likely to use the facility being considered for improvement.

3. Major Crossroads. Major crossroads are those crossroads that have a functional classification equal to or higher than the route being proposed for improvement.

Section 22-6 discusses logical termini in more detail with respect to the selection of project alternatives.

11-3.03 General Considerations

Prior to developing a Phase I study in detail, reaffirm the location of logical termini for consistency with the project goals, objectives, and NEPA requirements. Logical termini usually have been predetermined by other methods (e.g., need studies, comprehensive transportation studies). Also reaffirm the recommendations of any previous studies.

Upon reaffirming the recommendations of previous studies and selecting the major logical termini, consider the following factors in route planning for freeways, expressways, or bypasses:

- functional classification;
- directness;
- preliminary intersection or interchange locations;
- provision of good access to communities;
- effect on developed areas;
- route markings;
- plans of adjacent States for routes at State lines;
- location of major structures;
- flood hazards and longitudinal flood plain encroachments;
- displacement of businesses, families, and farms;
- property values and prime farmlands;
- public utilities;
- fire protection;
- traffic operations;
- operation and use of existing highway facilities and other transportation facilities during construction and after completion of project; and

- general environmental impacts including those on archaeological sites, historic sites, wetlands, special waste sites, and public lands (see Part III).

In the route planning process, it is necessary to use the knowledge and expertise from various disciplines and to obtain information from various sources. The following is a partial list of sources, information, and disciplines that are available in the route planning processes:

- photography;
- bridge condition reports, crash reports, and pavement condition ratings;
- natural resource and conservation agencies;
- local agencies;
- economists;
- geotechnical engineers;
- airport agencies;
- railroad agencies;
- sociologists;
- road designers;
- urban and regional transportation planning agencies;
- other resource, recreational, planning, and public agencies;
- utility companies; and
- special flood hazard area maps.

11-3.04 Overall Procedures

Once the route planning process is completed and a general route location is selected, the next step in the highway development process is to investigate and select a corridor location. Once the corridor location is selected, Phase I studies are initiated and the final alignment and design features are chosen.

For an overview of the Study Development Process for these types of projects, see the flowchart for a major project shown in Chapter 2. Each of these stages is discussed elsewhere in this chapter, Chapter 19, and Part III, Environmental Procedures.

11-4 CORRIDOR STUDIES

As applicable, a corridor study must reflect general engineering evaluations as discussed in Section 11-2 and the environmental analyses in Part III, Environmental Procedures. Section 11-4 presents additional information that applies specifically to a corridor study. Section 12-3.01 discusses the content and format of a Corridor Report.

11-4.01 Purpose

The purpose of a corridor study is to investigate all feasible corridors within a regional area as determined by the route planning process. In some cases, such a study could be considered a Feasibility Study. The feasibility of a corridor depends on the social, economic, environmental, and engineering effects of the proposed highway improvement within each corridor. Corridor studies usually are prepared only for new freeways, for new expressways where two or more existing routes are being considered for upgrading, or for a new two-lane highway proposed on new location.

A separate corridor study usually is necessary for lengthy projects on new location where alternative corridors are available for a proposed action. This analysis will indicate that alternative corridors can cause substantially different social, economic, or environmental effects or will essentially change the layout or function of connecting streets or roads. Because alternative corridors may be able to provide similar functions, a corridor study provides the means to select the most appropriate corridor for detailed studies of a highway facility. Coordinate and fulfill the appropriate requirements of Chapter 19 and Part III concurrently with the corridor study. The Development Process Chart for major projects in Chapter 2 illustrates corridor study coordination on a highway with environmental studies and public involvement activities.

11-4.02 Reconnaissance During Corridor Study

11-4.02(a) Objectives

The objectives of the reconnaissance stage of the corridor study are to:

- reaffirm the need for the proposed improvement,
- establish goals and objectives,
- establish the study area and logical termini,
- identify preliminary corridors,
- analyze each of the preliminary corridors, and
- eliminate corridors not feasible for further study.

11-4.02(b) Sources of Information

Use the following sources of information during the reconnaissance stage:

- State, County, and City maps;
- ASCS photography or IDOT photography;
- USGS quadrangle topographic maps;
- traffic maps and data;
- functional classification maps;
- Federal agency plans (e.g., U.S. Army Corps of Engineers, Coast Guard, Department of Interior, Department of Housing and Urban Development);
- special development plans (e.g., conservation, industrial, recreational, resource);
- population growth trends;
- utility maps;
- urban area transportation studies;
- other regional planning studies;
- road inventory data from the Illinois Road and Inventory System (IRIS);
- Illinois Department of Natural Resources (IDNR), including:
  - + Office of Water Resources for regulatory floodway maps,
  - + Office of Mines and Minerals for mined-out area maps,
  - + Office of Realty & Environmental Assessment for endangered species database, natural areas inventory, and parklands;
- USDA, Natural Resources Conservation Services for county soils surveys and wetland maps;
- Federal Emergency Management Agency (FEMA) for flood hazard boundary maps and flood insurance rate maps;

- USEPA/IEPA for a listing of special waste sites (e.g., LUST, USTS, CERCLIS sites); and
- IHPA for historic site location information.

This list is not all-inclusive, and the designer should consult all available sources prior to proceeding with the development of the corridor study.

11-4.02(c) Coordination

In accordance with Chapter 19 and Part III, Environmental Procedures, contact the following agencies during the reconnaissance phase:

- planning agencies;
- airport authorities;
- local agencies (e.g., counties, municipalities, townships);
- conservation, drainage districts, historical, recreational, and archaeological agencies; and
- other appropriate individuals or agencies.

Contacting these agencies will avoid conflicting improvements. See Section 22-5 for more information on coordination.

11-4.02(d) Study Area

Determining the need for a highway facility is a function of the Office of Planning and Programming and/or local urbanized area transportation agencies. Because the type of highway is selected during route planning, this identifies the geometric design requirements of the facility and the area of influence. Once the area of influence is determined, this allows an estimate of potential land development and, in turn, traffic growth within the corridor.

County or other area maps and USGS quadrangle topographic maps, combined with aerial photography, will furnish the locations of towns, streams, railroads, and other topographic features that will assist in defining the limits of the study area. Plot special flood-hazard areas on those maps for reference and analysis. Review these maps and locate feasible corridors upon the area maps with respect to local terrain, topographic features, and other controlling items. Use the area maps showing all feasible corridors as the basis to study and investigate different corridor locations.

The study area is determined through a general overview of area maps in the office and field trips. Field trips may be facilitated by prudent use of helicopter flights. The study area is that part of the area of influence within which the facility will be investigated. The limits of the study area may not be the same as the area of influence. Lateral limits are dependent on the distance between the major termini, the function of the highway, and the character of the area traversed.

11-4.02(e) Corridor Location

In general, locate new highway facilities as close as practical to major municipalities to maximize road-user and local-interest benefits and to contribute to the orderly growth of communities. Traffic volumes, combined with origin-destination studies and major transportation plans, reflect the need and extent of intersection or interchange connections to other highway facilities within the corridor. Determine whether or not these connections can be adequately developed (e.g., size of interchanges, length of access control on crossroads, profiles). It may be necessary to revise tentative corridors to accomplish this goal.

During this stage, determine the approximate location of major intersections and/or interchanges, major drainage structures, and the approximate number of proposed grade separations, if applicable. This information will be used for cost estimating. At this time, determine the need for frontage roads, service drives, and other related features, and their practicality. This will aid in the determination of corridor widths. Also, consider establishing an approximate gradeline for certain segments if:

- an abnormal amount of earthwork is anticipated.
- there is a major difference in the grading requirements of alternative corridors, or
- major drainage structures require that a gradeline be established.

In planning the location of a highway, avoid corridors that create longitudinal encroachments into flood plains. Transverse encroachments of a flood plain are unavoidable and, fortunately, create much less of an impact on floodways compared to longitudinal encroachments. However, transverse encroachments must still be investigated to establish the significance of floodway impacts.

Also, at this stage, a general geologic survey should be made to determine whether the study area contains any adverse soil conditions that could have a major impact on the suitability of a potential corridor. The district initiates the request for a Corridor Geotechnical Report by contacting the Soils and Foundations Unit in the Bureau of Bridges and Structures. If they are unable to conduct the study, the Soils and Foundations Unit will recommend hiring a consultant to complete the work.

Analyze the reconnaissance information and eliminate the unacceptable corridors. In the Corridor Report, note the reason(s) for the elimination of any corridors (e.g., environmental consequences, route planning considerations).

11-4.03 Analysis of Acceptable Corridors

11-4.03(a) Objectives

After completing the reconnaissance stage and eliminating unacceptable corridors, analyze the remaining corridor alternatives. The objective of this stage of analysis is to perform a detailed study of acceptable corridors. The following additional information will be useful during this stage:

- land use;
- habitat;
- drainage impacts and construction in flood plains;
- projected ADT's;
- fire districts, mail routes, school districts, drainage districts, and taxing districts shown on maps;
- recommendations from Geotechnical Reports;
- locations of major utility installations;
- other transportation facilities (e.g., commuter and freight railroads, airports, bus and trucking terminals);
- urban area transportation study reports and other data;
- regional planning agency reports;
- interagency coordination in accordance with Chapter 19 (public involvement) and Part III (environment);
- route planning considerations (see Section 11-3);
- private and commercial property owner reports; and
- location of cemeteries, 4(f) land, wetlands, threatened and endangered species/habitat, historic structures, archaeological sites, and special waste sites.

11-4.03(b) Final Corridor Exhibits

For rural areas, sketch corridors on aerial photography (screened half-tone positives) at a scale of 1 in = 600 ft (1:7500 metric). If recent aerial photography for rural areas is not available, county maps may be used initially until new photography is obtained. In highly urbanized areas, use aerial mosaics at a scale of 1 in = 100 ft (1:1000 metric). Sketch sensitive areas (e.g., parks, wetlands, natural landmarks, historic sites) and other controlling features on the base maps of aerial photography. As practical, avoid any of these controlling features and sensitive areas.

In addition to the use of aerial photography, sketch the final corridors on USGS quadrangle maps. Using the quad maps, consider the characteristics of the land including flood-prone areas and the need for major drainage structures. Evaluate soils maps in conjunction with aerial photography and locate any areas of unstable or unsuitable materials that must be avoided or replaced. These areas may cause stability problems for embankments or may not be suitable for excavated material to be used in embankments.

See Section 11-5.02 for the services and products available from the Aerial Survey Section in BDE.

11-4.03(c) Final Field Inspections

During the final analysis of acceptable corridors, conduct a field inspection of each corridor. This inspection should consider any features previously noted and observations should be made of any new local developments. Also, investigate other major features in the corridors and make decisions on the suitability of each corridor.

11-4.03(d) Estimate of Costs

Prepare a generalized cost estimate for all acceptable corridors; see Sections 12-4 and 65-1.02. This estimate, by necessity, will be an approximation because only major design features will have been determined. Therefore, a road user benefit analysis comparing alternative corridors will not be required.

11-4.03(e) Public Involvement

Public involvement for corridor studies is a combination of meetings with different agencies, interest groups, municipalities, and holding a number of informational meetings for the general public; see Chapter 19. The results of these meetings help determine the most suitable corridor or corridors for detailed design studies.

11-4.03(f) Selection of Final Corridor

When selecting the final corridor, consider the public involvement comments (see Chapter 19), environmental effects (see Part III), and engineering factors (Section 11-2). The final selection of a corridor is documented in a Corridor Report; see Section 12-3.

11-5 DESIGN STUDIES

As applicable, a design study reflects the engineering evaluations discussed in Section 11-2 and the environmental analyses in Part III, Environmental Procedures. Section 11-5 presents information that applies specifically to a design study for a major project (e.g., freeway, expressway, bypass) as defined in Section 11-1. Section 12-3.03 discusses the content and format of a Design Report for a major project.

11-5.01 Objective

Develop the purpose and need for the study of a major project and then investigate all plausible alignments within an approved corridor by using topographic mapping and aerial photography. In developing the design study, address the following features or items:

- design criteria;
- typical sections;
- intersection/interchange designs;
- access control features;
- horizontal alignment and vertical profile;
- right-of-way limits;
- number of traffic lanes; and
- the rationale for the location of bridges, interchanges, intersections, and other structures.

In addition, public involvement activities (see Chapter 19) and environmental studies (see Part III) shall be conducted concurrently with the design study. The Project Development Network for major projects shown in Chapter 2 illustrates the coordination needed in conjunction with public involvement activities and environmental studies.

11-5.02 Products and Services From Aerial Surveys

Extensive products or services are available from the Aerial Surveys Section for use in performing design studies and other types of work. Some of the more common products or services are:

- uncontrolled aerial photography (black and white or color);

- high-altitude Statewide photography;
- aerial photographic mosaics (i.e., aerial photographs that are pieced together to eliminate most of the distortion and then re-photographed);
- contact prints;
- CADD-generated mapping at a scale of either 1 in = 50 ft (1:500 metric) or 1 in = 200 ft (1:2500 metric);
- digital terrain models;
- screened positives of aerial photographs (paper prints can be produced from this product);
- oblique photography for use at informational and/or public hearings;
- enlargements or reductions of exhibits and mapping;
- a complete USGS quadrangle file for use by the Department;
- plotting of centerline on mylar sheets;
- photo plan and profile sheets;
- orthophoto maps (controlled aerial photography with contour lines superimposed on photography); and
- reading of cross sections from mapping.

To determine more details on the use of the above products and services, contact the Aerial Surveys Section.

11-5.03 Alignment Investigations

11-5.03(a) Review of Corridor Selection

Review the Corridor Report in detail before proceeding with the design study and ensure that the corridor decisions are still valid. Throughout the design study process, reaffirm the approved corridor as contacts are made with planning agencies. Also, assess any changes in land use or development plans to determine if corridor modifications should be considered. This is especially important if several years have elapsed between the corridor and design studies or if new information is discovered during a more in-depth design analysis.

11-5.03(b) Preliminary Alignments

The objectives of the first phase of a design study for a major project are to:

- Identify the preliminary alignments for study, including an analysis of the no-action alternative, and if applicable, analyze the alternative for improving existing highways. The no-action alternative is used as a base condition to determine the consequences of not proceeding with the project.

- Analyze the preliminary alignments identified in the previous step.

- Determine preliminary social, economic, environmental, and engineering factors that will affect the suitability of each preliminary alignment.

- Eliminate the preliminary alignments deemed unacceptable for detailed study.

Use county maps and USGS quad maps in the preparation of base maps for the remaining preliminary alignments. Indicate the following on these base maps:

- existing and projected land use,

- school districts,

- school bus routes,

- fire districts,

- neighborhood boundaries,

- parks and historic sites,

- natural landmarks, and

- other elements listed in Part III, Environmental Procedures, that may affect the location of the alignments studied (e.g., flood-plain encroachments, natural areas, wetlands, special waste sites, cultural resources, special lands, such as 4(f) and 6(f)).

Once the base maps have been prepared, determine and layout preliminary alignments from the following other known influences within the area:

- locations of municipalities,
- recreational areas,
- other highways,
- topography,

- property lines,
- acceptable locations of intersections or interchanges,
- industries, and
- the feasible locations of bridges (over railroads and waterways) and grade separations.

Once the preliminary alignments are identified on these base maps, eliminate the unacceptable alternatives. For the next step of alternative development, transfer plausible alignments to aerial photography. This is accomplished by requesting current aerial photography, scaled at either 1 in = 600 ft (1:7500 metric) or 1 in = 400 ft (1:5000 metric) for rural areas, and aerial photographic mosaics, scaled at either 1 in = 100 ft (1:1000 metric) or 1 in = 200 ft (1:2500 metric) for urban areas. The photographic exhibits are prepared as screened positives. This medium allows paper prints to be produced from the aerial photography. Depict the main influences and any other secondary influences on aerial photography. To proceed further with this phase of the design study, contact all affected agencies and planning commissions within the corridor again to obtain their comments and opinions. These agencies may be affected either directly or indirectly by the proposed improvement. This is part of the scoping process.

Analyze the results of these contacts. Revise or eliminate any of the alignments that are undesirable because of adverse engineering, environmental, economic, or social effects. Document the reason(s) any alignments have been discarded. Also, determine and discuss the impacts of the "no-action" alternative.

11-5.03(c) Mapping Requests

Long lead times are usually required to obtain mapping (one to two years) and, therefore, mapping requests must be made early so that delays do not occur in proceeding with a study. However, it must be noted that many times insufficient information may be available at the time mapping is requested and, therefore, some judgment must be used in deciding on the width limits of the mapping. Additional mapping always can be requested during the design study if needed for further alignment investigations.

In rural areas, the Department typically uses a 1 in = 200 ft (1:2500 metric) scale for topographic mapping where a freeway or expressway is proposed on new alignment. This mapping is commonly referred to as location mapping. However, if a freeway or expressway alternative is being considered along and adjacent to an existing rural highway, use a larger topographic map scale (i.e., 1 in = 50 ft (1:500 metric)). This larger scale enables the location study staff to make informed, accurate decisions on the feasibility and impacts of using the existing alignment, and it also can be used for the preparation of construction plans at a later time.

In urban areas, where a new freeway is being proposed or where an existing expressway is proposed for upgrading, or where the extension of an arterial route into an urban area is being proposed for reconstruction, use a 1 in = 50 ft (1:500 metric) scale topographic mapping for the design study. This larger scale mapping in urban areas provides the necessary detail to determine impacts, displacements, and right-of-way limits.

Submit all mapping requests to the Aerial Surveys Section. This Section will make the determination on whether the in-house staff can provide mapping or if there is a need to hire a mapping consultant. Also, requests for photography for the preparation of aerial photographic mosaics or digital imagery should be made at the same time as mapping requests. This procedure helps to ensure that the minimum number of flights is made to the project area.

11-5.04 Study of Design Alternatives

11-5.04(a) Objectives

After the set of plausible alternatives has been reduced to a set of feasible alignments, perform a detailed analysis to compare the remaining alternatives. Topographic mapping and aerial photography are the primary media used for this phase of the design study. The objectives of this phase are:

- to study and analyze the feasible alignments for a freeway, expressway, bypass, etc.;
- to identify acceptable design alternatives; and
- to choose and recommend a final preferred alternative for construction.

11-5.04(b) Sources of Information

The following are sources of information available, items to use, and items to consider for this phase of the design study:

- crash rate maps and collision diagrams (see Section 11-2.02);
- pavement and bridge condition reports (see Section 11-2.02);
- ADT traffic maps and DHV's for current and design year traffic (all affected routes) (see Section 11-2.02);
- detailed transportation maps and plans with all modes of travel included;
- utility installations and detailed maps from utility companies;
- fire, school, mail, and school bus routes; location of churches, drainage districts, and historic sites; and field-tile maps;
- commercial, agricultural, industrial, recreational, historic, and residential land use (see Part III);
- conservation areas, archaeological sites, wetlands, special waste sites, etc. (see Part III);

- local, State, and Federal agency coordination (see Section 22-5);
- maintenance information on existing routes (see Section 11-2.09);
- current topographic mapping at a scale of 1 in = 50 ft (1:500 metric) in urban areas and 1 in = 200 ft (1:2500 metric) in rural areas on new alignment or 1 in = 50 ft (1:500 metric) in rural areas where existing alignment is studied;
- current aerial photographic mosaics at a scale of either 1 in = 100 ft (1:1000 metric) or 1 in = 200 ft (1:2500 metric) in urban areas and aerial photography at 1 in = 400 ft (1:5000 metric) or 1 in = 600 ft (1:7500 metric) in rural areas;
- geotechnical investigations (see Section 11-2.10);
- highway geometrics (see Section 11-2.04), development of access control plans (see Section 11-2.03), and right-of-way issues (see Section 11-2.12);
- joint development uses, scenic easements, and aesthetics of highway design (see Chapter 33); and
- cost estimate (see Section 11-2.15) and road-user benefits (see Section 11-7.01).

11-5.04(c) Locating Alignments

Upon receipt of the topographic mapping, plot property lines, property names, names of roads, and all other important cultural features on the original mylar sheets. Make paper copies of the mapping sheets and tape together. This procedure allows the designer to review long lengths of the alignment in one view and to see how lines may best fit together. Begin laying out feasible alignments. With freeways and expressways, the major controlling items in locating the highway alignment are as follows:

- the proper location of interchanges and major intersections;
- topography;
- waterway crossings;
- property lines;
- avoidance of cultural features, if practical; and
- avoidance of regulatory environmental constraints.

In some cases, the placement of grade separations or major bridges may dictate the location of the highway and may require a revision to an initial proposed alignment.

After an alignment is laid out, determine the State plane coordinates of all control points (POTs and PIs) from the project mapping. This information, along with radii of horizontal curves, is

then input into a computer file to mathematically describe each alternative. Once an alignment is mathematized and tied into digitizing mapping files, the alignment can then be stationed from west to east or south to north and the information stored as a computer file for further design work.

11-5.04(d) Establishing Gradelines (Procedures)

Once an alignment is judged to be a probable final alternative, the design of the profile may then be investigated in detail. This may require designing two to three trial vertical profiles and performing several complete earthwork calculations. However, before profile work can be completed, preliminary drainage investigations (see Section 11-2.05), utilizing stream gauging data, USGS quadrangle maps, or togographic mapping, must be completed to set design high waters. Use computer programs to determine high waters and other drainage information. IDOT uses GEOPAK software for alignment, profile, and cross section designs. Once the overall design is finalized, compute earthwork using the GEOPAK software. This software allows the designer to quickly investigate trial profile designs, to determine quantities, and to determine construction limits. GEOPAK can also be used to generate perspective plots for any portion of the roadway. Use 3-D plots in the design process to assess potential safety problems and the aesthetic value of each final alternative.

The following procedures apply to the development of gradelines for construction and reconstruction projects:

1. Control Factors. Develop each feasible highway alignment on mapping sheets based on the following factors:

   - location of intersections or interchanges,
   - property lines,
   - topography, and
   - waterway crossings.

   These factors will be the main alignment design controls if environmental issues are not a significant factor.

2. Centerline Elevations. For each feasible alignment, develop a tabulation of groundline elevations along the centerline of the alignments at the selected station intervals. This may be done manually and plotted on a continuous roll of cross section paper or elevations may be read from digitized mapping and plotted using computer programs. The method of obtaining centerline elevations will be dependent on the length and complexity of the proposed project.

3. Controlling Features. Locate controlling features by station and elevation along the centerline profile, including:

- railroad crossings or separations,
- streams,
- highway crossings or separations,
- location and elevation of transverse utility crossings,
- rock outcrops, and
- known locations of unsuitable soils.

4. Trial Profile Gradelines. Once the groundline at the centerline of an alignment has been plotted, either manually or by using computer plots, and other controlling features such as PCs and PTs noted, the designer may then proceed to lay out the first trial profile gradeline. This procedure allows the designer to begin selecting VPI locations and elevations and to visualize how a profile might fit together over long distances. The selected VPIs are connected together by using a long, straight edge and drawing in the profile lines.

5. Vertical Profile. Examine the preliminary profile design considering the controls for vertical alignment discussed in Chapter 33. Make adjustments to ensure safety and to promote aesthetics. A good vertical alignment design should not be sacrificed only to achieve a balance in earthwork or solely to create a less expensive design.

6. Computations. Compile VPI elevations and stations and compute the gradient between VPIs. Determine the minimum length of vertical curves to be used at each VPI. Crest vertical curve lengths are set by using desirable K-values for the selected design speed or longer to emphasize aesthetic values. Sag vertical curve lengths have a more pronounced affect on the view of the road than crest vertical curves. Therefore, use longer lengths than the minimums wherever practical to provide a more pleasing profile.

Upon completing the first trial profile gradeline, use either of the following two methods to obtain cross sections from topographic mapping and to compute earthwork:

1. Method #1. Manually scale distances and groundline elevations from CADD-generated mapping sheets and compile data. Enter the data into a suitable earthwork program (available with either GEOPAK or equivalent software). Run the program using typical sections, special cross sections, superelevation runoff lengths, and the proposed profile.

2. Method #2. Provide State plan coordinate data for all POTs, PIs, horizontal curves, and beginning stationing. District staff then can submit this information to the Aerial Surveys Section for direct reading of cross sections from CADD-generated mapping. Enter the cross section data into a suitable earthwork program (available with either GEOPAK or equivalent software). Run the program using typical sections, special cross sections, superelevation runoff lengths, and the proposed profile.

Using either method, obtain a computer-generated mass-haul diagram and graphically investigate the earthwork balances. To assess the aesthetics of key roadway segments, use

computer-generated perspective plots to critique the facility from a driver's-eye view. Examine the results of the first trial profile and develop additional profiles as needed. Usually, two to three trial profiles are developed before a final profile gradeline is selected.

Upon selecting the final profile, request a computer-generated slope-stake table to determine right-of-way limits. Also see Section 34-5 for guidance on setting right-of-way limits. Then save the final preliminary earthwork file and use this file to develop final cross sections during the Phase II design.

11-5.04(e) Evaluation of Alternatives

Analyze each of the proposed final alignments considering the social, economic, and environmental factors discussed in Part III, Environmental Procedures. To properly analyze these effects, it may be necessary to meet again with affected agencies that had been previously contacted. See Chapter 19 for public involvement activities on major projects and Section 22-5 for guidance on coordination.

After the results of further investigations have been analyzed, there may be legitimate reasons to eliminate one or more final alignments. Discuss the reasons these alignments were not given further consideration in the Design Report. For instance, traffic estimates for the "no-action" alternative may overload existing routes creating unacceptable congestion and, thereby, eliminating this alternative.

11-5.04(f) Access Control Plans

Once the design study has eliminated all but two or three major alternatives for the proposed project, prepare an access control plan for each freeway, expressway, or bypass alternative; see Chapter 35. Prepare the plan on aerial photographic exhibits (i.e., screened positives) at a scale defined in Section 11-5.03(b). The access control plan will consist of all interchange, intersection, frontage road, service drive, and entrance locations. Also show all grade separations, major drainage structures, and any cattle underpasses or machinery underpasses that may be required. See Chapter 35 for the access control symbols.

Before an access control plan can be finalized, all intersection or interchange designs shall be developed and approved in sufficient detail to indicate all entrances and access control limits. Show all current property owners, property lines, and developments. In addition, indicate the approximate right-of-way limits for each alternative. If alternatives overlap or are closely spaced, it may be desirable to prepare separate sets of access control plans.

11-5.04(g) Exhibits

After completing all public involvement and environmental requirements, the original scaled mapping is reduced for insertion into an appendix to the Design Report. Prepare the reduced mapping sheets and other engineering exhibits on 11 in x 17 in sheets and place them in an appendix. In addition, place the aerial photography (access control plans) showing the alternatives advanced for environmental analysis and any other environmental exhibits on 11 in x 17 in sheets and place them in an appendix. The appendix can then be used in conjunction with a draft and final EIS or with an Environmental Assessment. Use the 11 in x 17 in format in all cases. This size format provides for ease of use of all final exhibits by planning, design, and land acquisition personnel.

11-5.04(h) Technical Reports

In completing a design study for an expressway, freeway, or bypass, it is usually necessary to prepare a number of technical reports. The following is a list of technical reports that may be required:

- Preliminary Drainage Report,
- Frontage Road/Service Drive and Access Road Justifications,
- Grade Separation/Road Closure Analysis,
- Crash Analysis Report Along Existing Route,
- Traffic Management Analysis (TMA) Report,
- Preliminary Pavement Design Report,
- Agricultural Report,
- Noise and Air Quality Report,
- Wetlands Technical Report,
- Biological Assessment or Detailed Action Report, and
- Geotechnical (Soils) Report.

Reference these technical reports in the Design Report and the EIS, as appropriate. It is also recommended that each report be assigned a letter description (e.g., Technical Report A, Technical Report B).

11-5.04(i) Selection of Preferred Alternative

Resolve all public involvement comments (see Chapter 19) and consider all environmental impacts (see Part III) and engineering factors (Section 11-2) before recommending a preferred alternative. See Chapter 12 for processing and approval of reports, Corridor Protection, Route Location Decisions, and for the Order Establishing a Freeway.

11-6 COMBINED DESIGN STUDIES

Sections 11-4 and 11-5 address projects which require a separate corridor study and design study, respectively.

Many proposed projects, such as reconstruction of an existing urban arterial, adding a new interchange to a freeway, creating a one-way urban street couple, or upgrading an existing two-lane highway to an expressway design using predominantly the existing alignment are categories of improvements where the corridor or location is predetermined due to the design of the project and, therefore, a separate corridor study is not needed nor required.

For these types of projects, the investigation of how to design the project is designated as a "combined corridor and design study." To shorten the title of the engineering investigations, the Department has redesignated these studies as "combined design studies." Projects in this category of improvement are major in nature, use most or all of the existing alignment and right-of-way, and usually involve the purchase of additional right-of-way adjacent and contiguous to existing right-of-way.

The items covered in Section 11-2 apply to studies in this category of improvement types and, in some instances, the information in Section 11-5 "Design Studies" applies to the engineering investigations. Review both of these sections before proceeding with the scope of a combined design study.

Projects designated as combined design studies are set up to follow Federal environmental and public involvement procedures to be eligible for Federal-aid construction funding and may or may not involve separate environmental documentation. If the proposed project qualifies as an ECAD/Categorical Exclusion type project, environmental documentation will be included in the Combined Design Report as a separate section. If not, a separate environmental report (EA or EIS) is prepared.

11-7 OTHER PHASE I STUDY CONSIDERATIONS

Section 11-7 discusses other analyses and procedures which might apply to Phase I studies.

11-7.01 Road User Benefit Analysis

11-7.01(a) Scope

To optimize the use of available highway funds, the Department's objective is to provide motorists with the safest and most economically efficient highway practical. Highway economy is not limited to the initial cost of construction. It also includes the cost of maintenance and operating costs to motorists. Any proposed improvement should be cost effective. It may be necessary to determine the comparative worth of likely alternative improvements where other considerations (e.g., highway location) do not clearly indicate a preferred alternative.

An aid in making these determinations is a road user benefit analysis. This analysis compares road user operating costs to highway construction and maintenance costs. Note, however, that the road user benefit analysis is not a complete economic analysis. It does not consider the solvency of the highway system or the economic impacts on adjacent land and communities. The road user benefit analysis, therefore, aids in making a selection between alternatives. It should not be used as the sole indication of engineering practicality.

Road user benefit analyses may be used, in conjunction with other considerations, for the following:

- comparing alternative alignments,
- determining the location of interchanges and grade separations, and
- determining the cost-effectiveness of providing freeway frontage or access roads.

Use the guidelines contained in the AASHTO publication *A Manual on User Benefit Analysis of Highway and Bus-Transit Improvements* in conjunction with this section when performing road user benefit analyses. Also consult NCHRP 133 *Procedures for Estimating Highway User Costs, Air Pollution, and Noise Effects.*

11-7.01(b) Procedures

When it is determined that other social-economic-environmental-engineering considerations do not control a specific location or design element, a road user benefit analysis may be conducted. For each proposed alternative, determine the annual road user costs and the annual cost of improving, maintaining, and operating that section of highway over a selected period of time. Then, arithmetically compare the alternatives to express a benefit ratio or quotient of a cost difference.

In the simplest form of the analysis, one alternative will be the proposed improvement and the other will be the base condition, normally the no-action alternative. For two or more alternatives, calculate a benefit ratio for each alternative and compare the results to that of the base condition. The ratio indicates the relative merit of each alternative considering road user benefits.

The annual road user cost is the total of the computed vehicular operating costs, travel time costs, and traffic crash costs. The highway improvement is divided into as many sections as there are significant variations among the major elements of analysis. Summation of the sectional road user costs provides the annual road user cost for that specific alternative. Road user costs include the costs of all traffic directly involved or indirectly affected by the improvement. For example, an analysis may include the road user costs both for vehicles operating on the new or improved route and for those vehicles continuing to operate on parallel or connecting routes on which traffic flow is affected by the improvement.

The road user analysis should cover the entire design period, normally 20 years. Figure 11-7A provides the average life expectancy, or period of amortization, for individual items comprising the highway cost.

Ensure that the alternative improvements are equivalent for those items not included in the road user benefit analysis. These items are primarily the degree of access control and the design features affecting operational safety. First determine and analyze the provision of access control and the retention of substandard features only for similar alternatives, or consider qualitative factors for these differences in the final analysis.

11-7.02 Road Closures

11-7.02(a) General

During the project development process, it may be necessary to assess the practicality of eliminating at-grade crossings that are within the limits of the proposed improvement. The primary reasons for eliminating crossings are to promote the safety and convenience of highway traffic and to best serve the public interest. If at-grade crossings will be eliminated, perform a study of the existing road system and traffic patterns to determine the most effective method of elimination (e.g., relocation, grade separation, closure).

With the design of freeways, it is necessary to eliminate at-grade crossings for traffic safety. The Department has the legal authority to either close, relocate, or to grade separate at-grade crossings with proposed freeways. This includes any highway, road, street, alley, or other public way. When cost effective, the Department may choose to eliminate at-grade crossings by proposing grade separations and, thereby, continuing the public way over or under the freeway. Because relocations and grade separations provide for the continuation of through traffic, road closure proceedings are not required.

ITEM	PERIOD OF SERVICE LIFE
Right-of-Way	100 Years
Major Structures: Substructures	100 Years
Major Structures: Superstructures	50 Years
Concrete Pipe & Box Culverts & Heavy Grading	40 Years
Portland Cement Concrete Pavement	40 Years
High-Type Flexible Pavement	40 Years
Continuously Reinforced PCC Overlay	20 Years
Metal Culvert Pipe	20 Years
Bituminous Concrete Resurfacing of PCC Base (Depending upon thickness, base, and traffic)	5 to 15 Years
Low-Type Flexible Pavement	12 Years
Gravel or Crushed Stone Surface	10 Years
Bituminous Surface Treatment of Gravel or Crushed Stone	5 Years

Note: The cost of light grading shall have the same service life period as the proposed surfacing or resurfacing. Table F in the Benefit/Cost Methodology in IDOT's Illinois Safety Improvement Processes Manual *contains service lives to be used for spot safety improvement projects.*

PERIOD OF SERVICE LIFE FOR HIGHWAY COSTS

Figure 11-7A

Expressways (partial access control) are more likely to require relocations of at-grade crossings or to remain in place than either grade separations or road closures. Complete closures of at-grade crossings primarily occur on freeways (full access control) where it is not practical nor cost effective to provide a grade separation at each local road or street and where a relocation may not involve such extensive adverse travel as to cause a serious disruption to local travel patterns.

During the design study, determine which at-grade crossings should be eliminated and document this information in a technical report to the Design Report or Combined Design Report. See Chapter 44 for a detailed analysis of whether or not to close a road. For appropriate signing guidelines on road closures, review the Bureau of Operations *Traffic Policies and Procedures Manual*.

Applicable sections of the *Illinois Compiled Statutes (ILCS)* discuss the authority to relocate or close roads and the means of implementation. Because closure procedures vary according to the type of improvement and jurisdiction, this subject will be treated in three sections:

- road closures for freeways (full access control),
- road closures for expressways (partial access control), or
- road closures for highways other than freeways or expressways.

The procedures described in the following sections are applicable to improvements on new location and improvements to existing facilities.

11-7.02(b) Road Closures for Freeways (Full Access Control)

The Department may close any intersecting road, street, alley, or other public way at its intersection with a freeway but only after holding a public hearing in the county in which the crossing is located. The hearing will consider the needs of local traffic and the effect of the closing on other highways in the locality. The authority for such closures is granted to the Department under Chapter 605, Section 8-106(b)(2) of the *Illinois Compiled Statutes* (contained in the publication *Road, Bridge, and Other Related Laws of Illinois* or commonly referred to as the *Illinois Highway Code*).

Road closure hearings are discussed in Chapter 19. Specific requirements for road closure hearings are included where appropriate. If no specific requirements are mentioned, the general public involvement procedures will apply. When road closure hearings are advertised and integrated with design or combined design hearings, the project record submitted for design approval normally will contain the required information as described in Chapter 19 and shall include hearing transcripts, road closure comments, copies of notices, and handouts.

If the road closure hearing for each county is held as a separate hearing before design approval is requested, the road closure transcript, copies of notices, and handouts shall be included with the project record that is submitted for design approval. If the road closure hearing is held as a

separate hearing after design approval is received, two copies of each of the following items must be sent to BDE for review and concurrence:

- transcript of the road closure public hearing;
- certification of publication of the road closure hearing notices from the newspaper or copies of the issue containing the notice;
- road closure public hearing notice as provided to the news media;
- handout distributed at road closure public hearing; and
- final recommendations.

When the requirements of a road closure public hearing are satisfied prior to receiving design approval or when a road closure public hearing is held subsequent to receiving design approval but before construction plans are completed, each "Order Closing a Public Way" shall be prepared and forwarded to BDE. In either case, before the "Order Closing a Public Way" document can be approved and filed in the County where the road closure is proposed, the Project Development and Implementation Section in BDE shall approve the required information on the road closure.

11-7.02(c) Road Closures for Expressways (Partial Access Control)

Road closures on expressways usually are accomplished through agreements with appropriate local officials according to Section 8-106(b)(1) of the *Illinois Highway Code*. When using this procedure, the district shall secure an Agreement with each local agency having jurisdiction over roads to be closed.

The district office will prepare and present the Agreement to the local officials together with a written request for their cooperation. Also, the district will make available a written or verbal explanation of the need to close the roads in question to those entities expected to act on the Agreements. Agreements need not be executed prior to design approval; however, the Design Report or Combined Design Report should include evidence of coordination with local officials.

In addition to the use of Section 8-106(b)(1) of the *Illinois Highway Code*, Section 8-106(b)(2) also may be used to propose the closing of any existing public road at its intersection with the expressway. In this case, the district will advertise and hold a road closure hearing and submit the appropriate information as designated in Section 11-7.02(b) for approval.

Provide a statement in the Design Report or Combined Design Report that construction of the recommended expressway design will not be initiated until critical road closures, applicable to the operations and safety of the expressway, have been completed.

11-7.02(d) Road Closures for Highways Other Than Freeways or Expressways

In the rehabilitation, relocation, or construction of State routes that are not freeways or expressways, it may be necessary to relocate or eliminate intersections with local roads, city streets, alleys, or other thoroughfares, usually for the safety and convenience of the traveling public. The following describes two options available to the Department for this procedure:

1. Traffic Control. IDOT has the authority to eliminate an intersection using a traffic control measure or device as authorized under Section 11-302(c) of the *Illinois Vehicle Code* (Chapter 625 of the *ILCS*). This can occur if IDOT determines that a local road intersection may be a hazard to State highway traffic.

   See the *Illinois Manual of Uniform Traffic Control Devices* for the full range of traffic control devices available to protect and give preference to State highway traffic. The Prohibition of Left Turns, Right Turn Only, and No Outlet are traffic control measures that may be considered at an intersection. However, note that the restriction or prohibition of access to a State route from an intersecting highway is not the same as a road closure or, to be more definitive, as vacating the local highway.

   In addressing the isolated elimination of crossings for non-freeways, IDOT also considers the interest of all affected highway authorities based on the intent of the *Highway Code*. Section 1-102 of the *Code* declares legislative intent and indicates the need for an integrated system of highways based on cooperation between various highway agencies. Therefore, when applying Section 11-302(c) of the *Illinois Vehicle Code*, consult with the local highway authority as a means of addressing any local concerns.

2. Road Closure and Relocation. The Department has the option to eliminate traffic at an intersection with a State route through a relocation or closing of the local highway. In this case, the local agency having jurisdiction over the intersecting roads or streets must authorize the relocation or closing. Municipalities, townships, and counties must meet different statutory requirements when asked to close roads under their jurisdiction. Counties and municipalities require action by their governing bodies, and township highway commissioners follow a specified procedure that allows for public input.

   Perform the following tasks when it is determined that a county or municipal road, street, or alley should be closed:

   - contact the appropriate local official;
   - explain the need to close the road, street, or alley;
   - provide adequate descriptions and information for the preparation of required legal documents; and

- request that the local agency take the necessary action to accomplish the closing.

Then, secure a reproducible copy of the passed resolution or ordinance on vacating the road and forward it to BDE for proper distribution. See Section 5-109 of the *Illinois Highway Code* for counties and Section 11-91-1 of the *Illinois Municipal Code*, Chapter 65 of the *ILCS*, for municipalities.

If a township or district road closure is proposed, prepare and sign a certificate describing the roads affected and the need for altering or vacating such roads. Ensure that the certificate and its processing conform to the requirements of Sections 6-303 and 6-305 of the *Illinois Highway Code*.

Although it is not necessary to close local roads prior to design approval, include evidence of the coordination with the local agency having jurisdiction over such roads in the Phase I report. Also, state in the report that construction of the recommended design will not be initiated until critical road closures, applicable to the operation and safety of the improvement, have been completed.

11-8 ENGINEERING COMPUTER PROGRAMS

11-8.01 General

IDOT uses various engineering programs for Phase I and Phase II work. These programs greatly increase the efficiency of providing solutions to the Department's engineering needs and should be used whenever possible. A catalog is now available, via IDOT's Intranet under Resources/Engineering Application Catalog Phase I and II, that list numerous hydraulic programs, traffic operations, and highway capacity programs. IDOT's major design software package is GEOPAK. GEOPAK is used for coordinating geometry, alignment and profile design, cross section designs, and 3-D modeling.

Contact BDE before using a program not listed in the Engineering Application Catalog.

11-8.02 GEOPAK Roadway Design Software

GEOPAK is a comprehensive, proprietary design software package that works as an interactive program within MicroStation. The Department presently is using this engineering program for its design work. GEOPAK is used to provide engineering solutions in Phase I work and to develop detailed plans in Phase II.

For Phase I studies, the following main features are available through GEOPAK:

1. Data Collection. GEOPAK allows electronic field data to interface with the software program or on CADD.

2. Generation of Alignments via Interactive Graphics. The software provides for the dynamic placement of tangents and arcs on digitized mapping. These items may be modified as needed to determine a final design.

3. Coordinate Geometry. GEOPAK provides a quick means to document and calculate the location of alignments in reference to State plane coordinates. Also, it can station alignments, provide curve data, calculate profile elevations, store existing ground cross section survey data by station-off-set-elevation or reading-distance, provide areas of land parcels, and determine many more solutions to geometric type problems.

4. Aids to Label Plans. It automates the generation and placement of labels onto mapping plans.

5. Digital Terrain Modeling. It can create 2D and 3D triangulated models.

6. Existing Ground Profiles. Existing ground profiles can be generated from a wide range of sources.

7. Existing Ground Cross Sections. Existing ground cross sections can be generated from a wide range of sources.

8. Proposed Cross Sections. Proposed cross sections can be taken at any location and at any skew from digitized mapping or survey data. The software can recognize the presence of specified substrata (e.g., rock) and adjust side slopes accordingly. Special ditch designs can be accommodated. Many other commands are also available.

9. Earthwork Computations. Earthwork computations are made from the graphical representation of the cross sections. This feature affords the user maximum flexibility. The user can graphically modify the cross sections in the CADD file and those modifications are automatically reflected in earthwork computations. The following earthwork support features are available:

- multiple layers of proposed fill,
- multiple layers of existing sub-strata,
- unsuitable material subsoil excavation,
- topsoil and any other material removal,
- separate expansion/shrinkage factors for excavation and fill,
- mass-haul diagrams, and
- balance points.

10. Limits of Construction. These limits may be drawn on the plan view after earthwork computations are finalized. This assists the designer in laying out right-of-way limits.

11. 3D Models. Once the final alignment, profile, and cross sections are determined, the designer may request perspective views of the road from any location and elevation above the road. This analysis may cause a change in the proposed design.

Detailed information on the uses of GEOPAK is available in the *User Reference Manual* provided to each district office. The *Manual* is also provided on-line and can be downloaded to the user's computer. The Engineering Systems Support Unit in the Bureau of Information Processing supports GEOPAK and assistance can be obtained by calling (217) 524-6532. Also in each district, the CADD supervisor or an Engineering Support Specialist may be available to provide assistance on the use of the GEOPAK software.

11-9 REFERENCES

1. NCHRP 399, *Multimodal Corridor and Capacity Analysis Manual*, Transportation Research Board, 1998.

2. NCHRP 418, *Research on the Relationship Between Economic Development and Transportation Investment*, Transportation Research Board, 1998.

Chapter Twelve

PHASE I ENGINEERING REPORTS

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

Chapter Twelve
PHASE I ENGINEERING REPORTS

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CHAPTER TWELVE
PHASE I ENGINEERING REPORTS

Chapter 11 discusses the goals and objectives of Phase I studies for projects administered by the Department. Chapter 12 discusses the content and format of Phase I engineering reports.

12-1 GENERAL

12-1.01 Purpose of Phase I Engineering Reports

The purpose of preparing reports for the projects in the annual and multi-year programs is to document the coordinated efforts of each district on why the Department is proposing an improvement and how the improvement will be designed to satisfy a need. Depending on the magnitude, complexity, and type of improvement proposed (e.g., new construction, reconstruction, 3R), the size of a Phase I engineering report and appropriate exhibits can vary from 10 or 20 pages to a few hundred pages.

These reports are more than just a paperwork requirement and have been created to ensure that a proposed improvement has been carefully evaluated, that appropriate policies and criteria are being used, that the design reflects an assessment of environmental concerns and, if required, that public involvement has occurred. These reports should be able to stand on their own and document all major design decisions and exceptions to policy.

12-1.02 Applicability of Report Types

Each type of Phase I study requires a corresponding report to document the findings of the investigation. Section 11-1.01 briefly identifies the study objectives and application for different types of Phase I studies. The items used to determine each type of Phase I engineering report are described below:

1. Corridor Report. The funding and scope of engineering (e.g., "major" Federally-funded project on new alignment) will determine when to prepare a Corridor Report. The following will apply to a Corridor Report:

    a. Funding. These projects involve Federal funding for construction or the desire to obtain future Federal reimbursement of construction costs.

    b. Engineering. Typically these projects involve significant lengths of highway on new location with alternative corridors available for the proposed improvement.

c. Typical Projects. Typical projects include new freeways, alternative bypasses around an urban area, or expressway designs with a considerable length of proposed highway on new locations.

d. *Environment. Because projects are major and are Federally funded, environmental aspects are addressed in a separate section of the Corridor Report or in the first tier of a tiered EIS.

e. Review. The BDE Project Development and Implementation Section reviews engineering information in the Corridor Report. The BDE Environment Section reviews the environmental information.

**Note: *Approval or concurrence of any environmental issues or approval of separate environmental documents is accomplished through coordination with the BDE Environment Section.*

2. Feasibility Study Report. A Feasibility Study, which is similar in scope and purpose to a Corridor Study, is typically prepared to assess whether or not a proposed highway improvement warrants further study or additional funding for Phase I engineering costs. Chapter 11 provides a description of some of the typical feasibility studies. The following other types of investigations are applicable:

- study of major drainage alternatives,
- comparison of proposed interchange types at different locations, and
- HOV studies versus other transportation alternatives.

The Feasibility Study Report documents the findings and recommendations of the study and, in many cases, may be used as a substitute for a Corridor Report. Reviews are essentially the same as for a Corridor Report and concurrence in the recommendations is by the Bureau Chief of Design and Environment.

3. Design Report. The funding and scope of engineering (e.g., "major" Federally-funded project on new alignment) will determine when to prepare a Design Report. The following will apply to a Design Report:

a. Funding. These projects involve Federal funding for construction or the desire to obtain future Federal reimbursement of construction costs.

b. Engineering. Typically, these projects involve significant lengths of highway on new location and include an analysis of potential alternative locations and a detailed design of each alternative.

c. Typical Projects. Typical projects include new freeways, new bypasses around an urban area within selected corridor, or expressway designs with considerable length of proposed highway on new locations.

d. Environment. Because projects are major and are Federally funded, environmental aspects are addressed in a separate document (i.e., EA or EIS). Also, see Note in Item 1.

e. Review. The BDE Project Development and Implementation Section reviews alignment design and engineering features in the Design Report. The BDE Environment Section reviews the environmental information (EA or EIS).

4. Combined Design Report. The funding and scope of engineering (e.g., "major" Federally-funded project on existing alignment) will determine when to prepare a Combined Design Report. The following will apply to a Combined Design Report:

a. Funding. These projects involve Federal funding for construction or the desire to obtain future Federal reimbursement of construction costs.

b. Engineering. Typically, these projects involve major projects using most or all of an existing highway alignment and right-of-way.

c. Typical Projects. The corridor or location is predetermined due to the design of the proposed project. Typical projects include:

- proposed expressway designs using much of the existing highway alignment;
- the upgrading of existing urban arterial or collector highways to add through lanes and/or the addition of a median or a change in median type;
- the creation of a one-way couple;
- the addition of an interchange;
- a change in type for an existing interchange;
- the reconstruction of an existing rural highway with a considerable number of changes to the alignment, profile, and front slopes and back slopes; or
- the reconstruction of an existing freeway or expressway to increase capacity by adding lanes and/or to increase safety.

d. Environment. Depending upon the anticipated environmental issues involved, the project could be a Group II CE, ECAD, EA, or EIS. If the proposed improvement qualifies as a ECAD/Categorical Exclusion type project, the

environmental documentation will be included in the Combined Design Report as a separate section. If not, a separate environmental report (EA or EIS) is prepared. Also, see Note in Item 1.

e. Review. The BDE Project Development and Implementation Section reviews the engineering information, including the cross-section design presented in the Combined Design Report. The BDE Environment Section reviews the environmental information (ECAD, EA, or EIS).

5. Project Report. Only the scope of engineering (e.g., "minor" State- or Federally-funded project using existing alignment) will determine when to prepare a Project Report. The following will apply to the Project Report:

a. Funding. These projects involve Federal or State funding for construction. The design of the project would allow it to be programmed for either Federal or State-only funding.

b. Engineering. Typically, these projects involve construction projects using an existing highway alignment, right-of-way or, possibly, some minor relocations.

c. Typical Projects. Typical projects may include:

- widening and resurfacing or resurfacing only of existing lanes,
- bridge rehabilitation or total bridge replacements,
- reconstruction of an existing intersection with minor right-of-way impacts, or
- other 3R projects which may involve an occasional curve relocation or profile changes.

d. Environment. These projects typically qualify as Categorical Exclusions and, therefore, the environmental documentation is included in the Project Report or, for an ECAD, in a separate document that can be included in the Project Report. Also, see Note in Item 1.

e. Review. The BDE Project Development and Implementation Section reviews the Project Report. The BDE Environment Section reviews the environmental information (ECAD, EA, or special analyses and studies which may be necessary to address environmental compliance requirements for specific types of resources or "potential for unusual circumstances") and comments are passed on to Regional Field Engineers.

6. State Improvement Report. The funding and scope of engineering (e.g., "major" State-funded project) will determine when to prepare a State Improvement Report. The following will apply to a State Improvement Report:

   a. Funding. A decision has been made that no Federal funds will be used for planning, right-of-way, or construction of the project.

   b. Engineering. Typically, these projects involve a major construction project that may or may not use an existing highway alignment or street.

   c. Typical Projects. Typical projects will include:

      - upgrading of existing urban arterial or collector highways to add through lanes and/or the addition of a median or change in median type;
      - creation of a one-way couple;
      - addition of an interchange;
      - change in type for an existing interchange; or
      - reconstruction of an existing intersection with significant right-of-way impacts.

   d. Environment. Include any environmental information and documentation of public involvement coordination in the State Improvement Report (SIR). Also, see Note in Item 1.

7. Pavement Preservation Policy (3P) Report. The funding and scope of engineering (e.g., "minor" State- or Federally funded project) will determine when to prepare a 3P Report. The following will apply to a 3P project:

   a. Funding. These projects may or may not involve Federal funding for construction.

   b. Engineering. These projects are maintenance-type improvements to prevent further pavement deterioration by repairing and resurfacing existing pavements. Avoid projects with significant severe roadside hazards where a 3R improvement would be more appropriate.

   c. Typical Projects. The emphasis of this program is to improve State highway pavements with few or no non-pavement items. Focus is on rural marked routes but urban marked routes and high-volume unmarked routes may be acceptable on a priority basis. Rural projects should be at least 1 mile (1.6 km) in length. No geometric revisions or pavement widening are permitted and acquisition of right-of-way is not allowed except for high accident locations. However, 1 ft

(300 mm) wide shoulder strips are required. Structurally deficient or functionally obsolete bridges should be gapped and addressed through other programs. Avoid projects with significant severe roadside hazards where a 3R improvement would be more appropriate.

d. Environment. These projects will usually qualify as Group I CE or occasionally as a Group II CE. Also, see Note in Item 1.

e. Review. Engineering information will be developed by the district using the standard 3P Report (fill in the blanks, check-off items, and attachments) and is discussed at a district coordination meeting. Occasionally, a special analysis may be required to address environmental compliance requirements. The district is responsible for compliance with engineering policies.

8. Surface Maintenance at the Right Time (SMART) Report. The funding and scope of engineering (e.g., "minor" State- or Federally funded project) will determine when to prepare a SMART Report. The following will apply to a SMART Report:

a. Funding. These projects may or may not involve Federal funding for construction.

b. Engineering. These projects are maintenance-type improvements to prevent further pavement deterioration by repairing and resurfacing existing pavements. Significant severe roadside hazards should have been previously addressed with a 3R improvement.

c. Typical Projects. The emphasis of this program is to improve State highway pavements with few or no non-pavement items. The focus is on rural marked routes but urban marked routes and high-volume unmarked routes may be acceptable on a priority basis. Rural projects should be at least 1 mile (1.6 km) in length. No geometric revisions, no pavement widening, and no shoulder work are permitted, and acquisition of right-of-way is not allowed except for HALs. Structurally deficient or functionally obsolete bridges should be gapped and addressed through other programs. Avoid projects with significant severe roadside hazards where a 3R improvement would be more appropriate.

d. Environment. These projects almost always qualify as Group I CE. Also, see Note on Item 1.

e. Review. The district will develop engineering information using the standard SMART Report (fill in the blanks, check-off items, and attachments), and the project is discussed at a district coordination meeting. Occasionally, a special analysis may be required to address environmental compliance requirements. The district is responsible for compliance with engineering policies.

12-1.03 Functions

Phase I reports provide a systematic methodology for identifying and evaluating location, design, and environmental issues. The report provides a medium for documenting the decision-making process and communicating the reasoning for the proposed improvement need. In this capacity, the report fulfills many functions, including:

1. Project Summary. Phase I reports summarize the coordinated efforts of both the district and Central Offices in determining the need for a project and how it will be designed.

2. Public Involvement. Phase I reports provide an organized document that can be used by the district to discuss improvements with the public and to ensure that the proposed project has been planned consistent with safety and cost-effective objectives.

3. Plan Preparation Guide. A Phase I report provides a reference guide for preparing construction plans and ensures that certain prerequisite design and environmental requirements have been met. This aids and expedites plan preparation, scheduling, environmental coordination, and construction.

12-1.04 Objectives

All Phase I engineering reports should meet the following general objectives:

- Present the study findings in clear, unambiguous language. As practical, the writing should be understandable to the general public.

- Do not duplicate information documented in other reports (e.g., environmental documents, TMA, Geotechnical Report, Preliminary Drainage Report, Bridge Condition Report). The Phase I engineering report should reference or summarize these other documents.

- Ensure all relevant information is included or referenced in the report so that the reader can understand the reasons for the design decisions.

- Ensure the level of detail in the report is commensurate with the conceptual objective of a Phase I study; i.e., limit the information to that needed to make major decisions.

12-1.05 Content

A Phase I engineering report should document the following, as applicable:

1. Prior Studies. List and analyze any prior studies relevant to the undertaking.

2. Project Need. Include all the necessary information, technical reports, and other materials to clearly demonstrate the study has adequately demonstrated the need for safe, fast, and efficient transportation. In addition, document the construction cost, traffic benefits, and public services provided by the highway improvement.

3. Local Conditions and Improvements. Briefly describe the highway/pavement conditions adjacent to the proposed action and any plans for future improvements. Coordinate these items between district offices for route continuity when district boundary lines fall between logical termini.

4. Improvement Alternatives. Describe the alternatives considered and discuss the anticipated social, economic, and environmental effects of the alternatives, emphasizing the significant differences and the supporting reasons for the proposed location or design. In addition, analyze the relative consistency of each alternative with the goals and objectives of any adopted local or regional urban plan. Depending on the type of study, also include the following information:

   a. Corridor Studies. For Corridor Studies (see Section 11-4), describe the termini, the general type of facility, the nature of the service that the highway is intended to provide, and other major features of the alternatives.

   b. Design Studies. For Design Studies (see Section 11-5), describe the critical elements such as safety and crash patterns on the existing route, applicable design criteria (e.g., new construction, reconstruction, 3R), traffic volumes, number of traffic lanes, other cross-section elements, access control/access management features, method of locating horizontal alignment, vertical profile considerations, right-of-way requirements, pedestrian considerations, intersection designs, interchange designs, hydraulic information, bridges, and other structures.

5. Environmental Issues. Summarize or reference the discussion in the environmental document on the anticipated social, economic, and environmental effects as discussed in Part III, Environmental Procedures. Identify the adverse effects, develop appropriate measures to eliminate or minimize these effects, and estimate the associated costs.

6. Policy and Design Exceptions. List any major design exceptions from IDOT policies and design criteria (e.g., engineering, environmental) together with supporting reasons, pertinent minutes of district coordination meetings, and relevant documentation of BDE coordination with FHWA, if appropriate. For geometric design exceptions, see Chapter 31.

7. Maps and Drawings. Include the appropriate maps or drawings of the location or design for which approval is requested.

8. Summary of Public Involvement. Provide a summary and analysis of the comments received from the public involvement process (see Chapter 19) and from the environmental analyses (see Part III, Environmental Procedures) based on:

   - coordination with the State's resource, recreational, planning, and historic agencies; and

   - those Federal and local agencies, public officials, and public advisory groups that IDOT knows or believes are interested in and/or affected by the proposed action.

9. Costs and Schedules. Express the costs in monetary, numerical, or qualitative terms. Estimate costs and tentative schedules for right-of-way acquisition and construction. For major projects requiring more than one construction season, provide cost estimates for individual usable segments for construction staging. The multi-year highway improvement program can then be developed using the individual segment costs rather than an estimated proportional cost of the total project.

   If cost breakdowns for individual segments or improvement alternatives are necessary, use multiple columns on the cost-estimate sheet or provide multiple cost estimate sheets. For all cost estimates, indicate the base year and separate all construction, right-of-way, utility adjustment, and consultant PE costs to facilitate the programming of these items.

   See Section 12-4 for more information on cost estimates.

12-2 REPORT FORMAT FOR MAJOR STUDIES

Section 12-2 presents the detailed outline format that can be used for a Corridor Report, Design Report, Combined Design Report, or State Improvement Report. Section 12-3 discusses specific requirements for report content of major and minor studies. Use the following format, as applicable, when developing reports for major studies:

I. INTRODUCTION

- A. Description and Location of Project
- B. History of Project
- C. Discussion of Design Criteria Used (e.g., new construction, reconstruction, 3R) and Highway Types Considered

II. PURPOSE AND NEED FOR THE IMPROVEMENT

- A. Conditions on Existing Highway Network
  - 1. Typical sections
  - 2. Extent of access control/access management
- B. Existing Traffic and Capacity Deficiencies
- C. Crash Information
- D. Alignment and Profile Deficiencies
- E. Corridor Studies

III. EXISTING SETTINGS OR CONDITIONS

- A. Description of Project Area
- B. Project Limits (logical termini)
- C. Land Use (fire districts, school bus, and mail routes)
- D. Environmental Resources
- E. Sensitive Environmental Areas
  - 1. Parks and recreational areas (Section 4(f) properties)
  - 2. Floodplains and waterways
  - 3. Wetlands
  - 4. Historical sites
  - 5. Special waste sites
  - 6. Endangered species locations
  - 7. Natural areas

IV. ALTERNATIVES CONSIDERED

- A. Transportation Demand Strategies
- B. Mass Transit (if applicable)
- C. Proposed Highway Design Guidelines
  - 1. Typical sections

2. Design speed
   a. Horizontal alignment
   b. Vertical profile
3. To remain in place criteria
4. Proposed access control or access management

D. No Action (continued maintenance)

E. Widen Existing Roadway or Major Reconstruction of Existing Roadway
1. Urban arterial improvement
2. Expressway design

F. Construction on New or Existing Locations
1. Freeway design
2. Expressway design
3. Bypass around towns
4. New rural two-lane highway

G. Description of Intersections or Interchanges
1. Locations and types
2. Design features
3. Level of service achieved
4. Signal progression (if applicable)
5. Uniformity of types

V. DESCRIPTION AND ANALYSIS OF ALTERNATIVES STUDIED IN DETAIL

A. Attainment of Purpose and Need
B. Traffic Service to Region
C. Engineering Considerations Including Aesthetics (e.g., combining horizontal and vertical alignments)
D. Important Social, Economic, and Environmental (SEE) Effects (mainly reference)
E. Utility Involvements/Drainage Considerations
F. Possible Mitigation Measures
G. Discussion of Costs and Benefits
H. Priority of Implementation

VI. COORDINATION ACTIVITIES

A. Local Governments/Metropolitan Planning Organizations
B. State and Federal agencies
C. Property Owner Considerations

VII. PUBLIC INVOLVEMENT ACTIVITIES

A. Advisory Committee and Working Groups (if desirable)
1. Public interest groups
2. Agricultural groups
3. Growth and development groups

4. Public officials groups

B. Informational Meetings/Property Owner Contacts
C. Design Public Hearing (open house meeting)
D. Analysis of Correspondence
E. Commitments

VIII. CONCLUSIONS/RECOMMENDATIONS

A. Recommended Design Alternative
B. Supporting Reasons for Alignment Recommendation and/or Design Features (be specific)
C. Discussion of Design Exceptions
D. Identification of Criteria for Implementing Next Step/Phase of Study
E. Proposed Interim Improvements or Stage Construction (if applicable)

IX. APPENDICES (Usually produced in an 11 in x 17 in format)

A. Quad Maps and County Maps
B. Proposed Typical Sections
C. Schematic Drawings Showing Traffic Data
D. Aerial Mosaics Showing Alternatives and Important Cultural Features
E. Environmental Survey Data Shown on Aerial Mosaics, As Needed
F. Topographic Mapping, As Needed, Showing Alternatives
G. Oblique Photographs and Photomontages (perspective view of a proposed highway)
H. Schematics of Interchange Designs and Approved Interchange/Intersection Design Studies (IDSs)

For major projects, prepare the Appendix as a separate document using 11 in x 17 in sheets. In this case, a separate Appendix improves the readability of the Report, allows design information to be examined more easily, and simplifies the conveyance of information to the design and land acquisition personnel.

12-3 SPECIFIC PHASE I REPORTS

Major studies should follow the detailed outline format described in Section 12-2. Section 12-3 presents information specific to the content of individual Phase I engineering reports.

12-3.01 Corridor Reports

A corridor study is developed according to the guidance in Section 11-4. In addition to the information listed in Section 12-2, also include the following in the Corridor Report:

1. Structure of Report. Lay out the Corridor Report in the format as shown in Section 12-2. In addition, consider the following:

   a. Table of Contents. Provide a table of contents for the report that should list each separate report section, the figures and tables, and appendices.

   b. Page Numbers. Consecutively number the pages in the report including all exhibits and figures (i.e., do not renumber each major section).

   c. Exhibits. Show all exhibits as figures with figure numbering for easy referencing. Place figures, small maps, and tables at the back of the report and reference them in the text. Place large figures (11 in x 17 in format) in an Appendix to the report. Removing the figures and tables from the text allows for easier reading and review of the report, quicker access to a desired page number, and more effective positioning and access of materials that are used to support the text.

   d. Cross References. Provide cross-references to information provided elsewhere in the report (e.g., other sections, figures, appendices).

2. County Maps. Use 11 in x 17 in sheets and a scale of either 1 in = 1 mile (1:60,000 metric) or 1 in = 2 miles (1:120,000 metric). Indicate the following on these maps:

   - all corridors studied;
   - all acceptable corridors; and
   - existing and proposed land use including:
     + flood plains/floodways,
     + school districts,
     + fire protection districts,
     + recreational areas and lakes (existing and proposed),
     + airports,
     + historic sites,
     + archaeological sites (only show on internal use maps),
     + CERCLIS sites,

+ wetland sites/natural resources, and
+ other pertinent information.

3. USGS Quadrangle Maps. Use 11 in x 17 in sheets and a scale of 1 in = 2000 ft (1:24,000 metric). This larger scale is used to provide more detail on the project and to show topography.

4. Traffic Data. Determine design year ADT volumes for all acceptable corridors. This data is used during the corridor selection stage. Prepare ADT volume data for other highways within the area of influence and determine the impacts the improvement will have on the entire system of highways in the area.

5. Corridor Report Discussion. Discuss the following items:

a. General Description. Describe the following for each alternative:

- purpose and need of the project,
- logical termini,
- general type of facility,
- nature of service which the highway is intended to provide, and
- other major features.

b. Prior Studies. Discuss any prior studies relevant to the undertaking (e.g., feasibility studies) and a reaffirmation of the need for the improvement.

c. Eliminated Alternatives. Discuss the alternative corridors considered but not studied further, and describe the reason(s) the alternatives were discounted. Identify and discuss the environmental factors (as discussed in Part III, Environmental Procedures) that were considered in the preliminary investigation but were not considered significant determinants among the alternatives.

d. Compatibility with Highway System. Discuss the compatibility of the alternatives studied with the existing street and highway plans or related comprehensive plans. Where these plans do not exist, discuss the extent of coordination with local officials concerning highway needs.

e. Compatibility with Other Plans. Discuss the compatibility of the alternatives studied with the plans and objectives of all agencies affected by the improvement.

f. Advantages and Disadvantages of Final Alternatives. Discuss the advantages and disadvantages of the final acceptable corridors, including the no-action alternative. Discuss the issues of primary concern to the Department such as construction costs, right-of-way acquisition, highway maintenance, traffic operations, type of access control, and any other pertinent engineering aspects

(see Section 11-4) of the improvement. Also, when applicable, discuss other transportation facilities in the corridor.

g. Environmental Considerations. Discuss the socio-economic and environmental advantages and disadvantages of the final acceptable corridors, including the no-action improvement alternative. Discuss the environmental considerations as they relate to each alternative (see Part III, Environmental Procedures). Identify the adverse effects, appropriate measures to minimize or eliminate the adverse effects, and the costs to do so.

h. Impacts on Existing Communities. In addition to the general factors mentioned above, discuss the impacts on existing communities where a corridor passes near or through an urban area. Include the following in the discussion:

- change in travel patterns;
- the estimated number of people, dwelling units, and business establishments being displaced and the economic effects on the communities;
- the potential for land use change and the likelihood of joint development; and
- the relative consistency of the alternatives with the goals and objectives of any urban plan adopted by the community concerned.

These factors will often significantly impact the selection of the corridor location in densely populated areas. Ensure that the proposed corridor adequately reflects the urban transportation planning process.

i. Public Involvement and Environmental Coordination. Include a summary and analysis of the views received as a result of public involvement activities and environmental coordination.

j. Recommended Corridor. Identify the recommended corridor and provide a synopsis of the determinants used in making the final selection.

6. Estimate of Cost. Include a general estimate of right-of-way and construction costs for those corridors that have not been eliminated. The estimate should reflect the effects the proposed improvement will have on the existing transportation system in conjunction with other needed proposed improvements in the corridor.

7. Map Exhibits. In the discussion, reference all exhibits used in the study. As needed, develop map exhibits and other exhibits on 11 in x 17 in sheets. If a large number of

exhibits are planned for the report, prepare a separate Appendix for the report. A separate Appendix provides a more useful format.

12-3.02 Feasibility Study Reports

A feasibility study is very similar to the details described for a corridor study and, in many cases, the feasibility study is documented in a similar format as a Corridor Report. See Sections 11-1.01(c) and 12-1.02 for typical situations where a feasibility study is initiated.

12-3.03 Design Reports

A design study is developed according to the guidance in Section 11-5. In addition to the information listed in Section 12-2, consider the following items in the preparation of the Design Report:

1 Structure of Report. Lay out the Design Report in the format as shown in Section 12-2. In addition, consider the following:

a. Table of Contents. Provide a table of contents for the report that should list each separate report section, the figures and tables, appendices, and other reports included with the Design Report.

b. Page Numbers. Consecutively number the pages in the report including all exhibits and figures (i.e., do not renumber each major section).

c. Exhibits. Show all exhibits as figures with figure numbering for easy referencing. Place figures, small maps, and tables at the back of the report and reference them in the text. Place large figures (11 in x 17 in format) in either Appendix A or B. Removing the figures and tables from the text allows for easier reading and review of the report, quicker access to a desired page number, and more effective positioning and access of materials that are used to support the text.

d. Technical Reports. Provide a summary or reference the information provided in the technical reports.

e. Cross References. Provide cross-references to information provided elsewhere in the report (e.g., other sections, figures, appendices).

f. Checklist. Section 12-3.09 provides a checklist that may be used to ensure all applicable project information, certifications, coordination, and other requirements are covered in the Design Report.

2. Design Report Discussions. Include the following discussions in the Design Report:

a. Summary of Need and Location. Provide a summary of the need for the improvement and reasons supporting the general location of the highway as described in the Corridor Report.

b. Prior Studies. Include an analysis and listing of prior studies relevant to the improvement.

c. Plausible Alternatives. Discuss the plausible alternatives considered but not studied in depth, and provide a detailed explanation of why these alternatives were eliminated. Also address the "no-action" alternative.

d. Major Design Features. Provide a detailed explanation of how major control points (e.g., interchange locations, river crossings, topography) were selected for the location of alignments on mapping; how the alignment best satisfies the geometric needs of an intersection or interchange; selected median types; and how the profile relates to the intersections and interchanges so that driver decision points are not hidden or cause visual obstructions. Also, provide a detailed explanation of aesthetic considerations for combining alignment and profiles; see Chapter 33.

e. Compatibility with Highway System. Discuss the compatibility of the alternatives studied with existing street and highway plans including any necessary detours. Also discuss the compatibility of alternatives with comprehensive urbanized plans or, where these plans do not exist, the extent of coordination with local officials concerning their highway needs.

f. Environmental Considerations. Present the social, economic, and environmental advantages and disadvantages of the final alternatives studied, including the "no-action" alternative. Part III, Environmental Procedures, discusses environmental considerations.

g. Final Alternatives. Discuss the advantages and disadvantages of the final alternatives studied with respect to:

- purpose and need;
- traffic service, safety and operations;
- construction and maintenance considerations and costs; and
- other pertinent aspects, such as those revealed by engineering analyses; see Section 11-2.

h. Public Involvement and Environmental Coordination. Provide a summary and an analysis of comments and concerns received as a result of public involvement activities and environmental coordination.

i. Maintenance and Protection of Traffic. If applicable, discuss the management of existing traffic during construction; see Chapter 13.

j. Commitments. Provide a list of commitments made during the public involvement process and interagency coordination. This list should eventually be discussed with the Phase II design squad and then transmitted to construction personnel.

k. Recommended Alternative. Identify the recommended design alternative and present a synopsis of the determinants for its selection. Demonstrate that the recommended alternative best meets the purpose and need of the project with consideration of its social and environmental impacts.

3. Estimate of Costs. Prepare a cost estimate for all final alternatives developed by usable segments. A usable segment is suitable for traffic operations and construction phasing. The estimate format should follow that shown in Section 12-4 and Chapter 65.

4. Typical Sections. Provide typical sections for all proposed and affected roadways. Include pavement cross sections from preliminary pavement designs.

5. Base Maps. Use county maps or USGS Quadrangle Maps as a base map to show all alternatives considered initially, the final alternatives advanced for detailed study, and the termini of the design study.

6. Aerial Photography. Use uncontrolled photography in rural areas and controlled aerial photography in urban areas. Indicate the access control limits and sensitive environmental features for the alternatives advanced for detailed study. Prepare these exhibits on 11 in x 17 in sheets and place them in a separate Appendix A. This Appendix is used in conjunction with an EIS or EA and for the overall design study. Section 11-2.03 and Chapter 35 discuss access control features. Include in the Design Report a discussion on the specific access control features of the project. The Report should analyze and justify road closures and access features on expressways and freeways; see Sections 11-7.02 and Chapter 44.

7. Mapping Exhibits. Reduce original mylar sheets of mapping at 1 in = 50 ft (1:500 metric) or 1 in = 200 ft (1:2500 metric) scales by 50% to 1 in = 100 ft (1:1000 metric) and 1 in = 400 ft (1:5000 metric), respectively. Prepare mapping exhibits as plan and profile sheets for reduction on 11 in x 17 in sheets. Show the following on the mapping sheets:

- State plane coordinates for all control points,
- right-of-way limits,
- preliminary design data,

- structure locations,
- horizontal alignment,
- proposed frontage roads and service drives, and
- current ADTs for all intersected or affected roadways.

Use a vertical scale of 1 in = 20 ft (1:250 metric) with 1 in = 200 ft (1:2500 metric) mapping and a vertical scale of 1 in = 5 ft (1:50 metric) with 1 in = 50 ft (1:500 metric) mapping. Combine the complete design of the highway as shown on the mapping sheets with the profile to make the final plan and profile sheets. Place these final reduced sheets into a separate Appendix B.

8. Intersection/Interchange Design Studies. Include approved IDSs for all interchanges and major intersections for each studied alignment carried to a public hearing. Prepare Intersection Design Studies in accordance with Chapter 14 and Interchange Type and Design Studies in accordance with Chapter 15. Include reduced-size copies of approved IDSs in Appendix B.

9. Public Involvement Document. On large complex projects, a considerable volume of letters is received from the public and different agencies concerning the need for the project and the possible impacts. For guidance on responses, refer to Section 19-6.04, Section 24-2, Activity 15, and Section 25-2, Activity 23. To organize this information and to make it more useful for future reference in case of litigation or questions concerning environmental issues, the letters and their responses are included together in a separate volume. When a large number of similar comments are received, it may be advantageous to prepare a newsletter and mail to public meeting participants.

12-3.04 Combined Design Reports

The Combined Design Report is prepared where the corridor or location is predetermined due to the design of the proposed project. See Section 12-1.02 for a listing of typical projects in this category. At a minimum, the Combined Design Report should include the items listed in Section 12-2 and the following:

1. Structure of Report. Lay out the Combined Design Report in the format as shown in Section 12-2. In addition, consider the following:

   a. Table of Contents. Provide a table of contents for the report that should list each separate report section, the figures and tables, appendices, and other reports included with the Combined Design Report.

   b. Page Numbers. Consecutively number the pages in the report including all exhibits and figures (i.e., do not renumber each major section).

   c. Exhibits. Show all exhibits as figures with figure numbering for easy referencing. Place figures, small maps, and tables at the back of the report and reference them

in the text. Place large figures (11 in x 17 in format) in either Appendix A or B. Removing the figures and tables from the text allows for easier reading and review of the report, quicker access to a desired page number, and more effective positioning and access of materials that are used to support the text.

d. Technical Reports. Provide a summary or reference the information provided in the technical reports.

e. Cross References. Provide cross references to information provided elsewhere in the report (e.g., other sections, figures, appendices).

f. Checklist. Section 12-3.09 provides a checklist that may be used to ensure all applicable project information, certifications, coordination, and other requirements are covered in the Combined Design Report.

2. Functional Classification. Identify the functional classification of the highway proposed for improvement and for all affected roadways.

3. Typical Sections. Provide typical sections for the proposed improvement and all side roads. Include pavement cross sections from the preliminary pavement design.

4. Traffic Volumes. Include the current and design year traffic volumes for the proposed facility and for all crossroads; see Section 11-2.02.

5. Area Map. Provide an area map that indicates the general location of the improvement.

6. Existing Conditions and Alternative Features. Present the existing conditions and features along the proposed improvement. This information may be shown on a county map, city map, or photographic aerial mosaic, as needed, to adequately illustrate differences and termini. Prepare these exhibits on 11 in x 17 in sheets.

7. Major Design Features. Indicate the criteria used (e.g., new construction, reconstruction) and present, on appropriate exhibits such as topographic mapping, the proposed design for the project. Include horizontal and vertical alignment revisions, intersections, entrances, any grade separations, drainage structures, and other major design features. The original mylar sheets of mapping with proposed design features are reduced 50% and prepared on 11 in x 17 in sheets for the report. If an extensive number of exhibits are needed, place them in an Appendix to the report. Also, include the appropriate information from any engineering analyses; see Section 11-2.

8. Right-of-Way Requirements. Provide an indication of the right-of-way to be acquired in sufficient detail to inform an individual of the affect on his or her property. This is usually shown on topographic mapping for the project. Also, discuss the resolution of any encroachment or utility adjustment problems.

9. Intersection/Interchange Design Studies. Include approved Intersection Design Studies (Chapter 14) or Interchange Type and Design Studies (Chapter 15) for all major intersections. Use an 11 in x 17 in reduced size sheet format.

10. Estimate of Costs. Provide cost estimates by usable segments, if applicable, or for an isolated project in accordance with the format in Section 12-4 and Chapter 65.

11. Combined Design Report Discussion. Discuss the following items:

    a. General Description. Describe the need for the improvement, the general type of facility, the nature of service which the highway is intended to provide, and the adjacent highway sections including any plans for improvements on adjacent sections.

    b. Corridor Feasibility. Discuss the reasons that no other corridor or location is feasible.

    c. Alternatives and Environmental Considerations. Discuss any plausible alternatives considered and the reasons why these alternatives were eliminated. Use the ECAD record form as a checklist to identify the social, economic, and environmental considerations. For large complex projects, an EA or EIS may be required; see Part III, Environmental Procedures.

    d. Compatibility with Highway System. Discuss the compatibility of the alternatives studied with existing street and highway plans including related comprehensive urban plans and pedestrian facilities. Where these plans do not exist, discuss the extent of coordination with local officials on highway needs.

    e. Final Alternatives. Discuss the advantages and disadvantages of the alignment or cross section alternatives studied with respect to the following:

        - purpose and need;
        - traffic service, safety, and operations;
        - maintenance and protection of traffic during construction;
        - the need for bridge improvements;
        - the need for traffic signals and progression;
        - access control or access management considerations;
        - construction costs and right-of-way impacts; and

- other pertinent aspects (e.g., those revealed by an engineering analysis); see Section 11-2.

f. Recommended Improvement. Provide a summary of facts leading to the recommended improvement, including the consideration of the "no-action" alternative and an analysis of all comments received as a result of public involvement (see Chapter 19) and environmental coordination (see Part III, Environmental Procedures).

g. Commitments. Provide a list of commitments made during the public involvement process and interagency coordination. This list should eventually be discussed with the Phase II design squad and then transmitted to construction personnel.

12. Public Involvement Document. On large complex projects, a considerable volume of letters is received from the public and different agencies concerning the need for the project and the possible impacts. For guidance on responses, refer to Section 19-6.04, Section 24-2, Activity 15 and Section 25-2, Activity 23. To organize this information and to make it more useful for future reference in case of litigation or questions concerning environmental issues, the letters and their responses are included together in a separate volume. When a large number of similar comments are received, it may be advantageous to prepare a newsletter and mail to public meeting participants.

12-3.05 State Improvement Reports

A State Improvement Report is a combined engineering/environmental document prepared for a State-only or State and locally funded project. This report is used when the scope of the project is major in nature and a programming decision is made that no Federal funds will be used for planning, right-of-way, or construction of the project. See Section 12-1.02 for a description of typical projects. Environmental information, agency coordination, and public involvement coordination are included in the report. Consider the following when preparing State Improvement Reports:

1. Format. The format of a State Improvement Report generally will be similar to that of a Combined Design Report; see Section 12-3.04.

2. Structure of Report. Lay out the State Improvement Report in the format as shown in Section 12-2. In addition, consider the following:

   a. Table of Contents. Provide a table of contents for the report that should list each separate report section, the figures and tables, appendices, and other reports included with the State Improvement Report.

   b. Page Numbers. Consecutively number the pages in the report including all exhibits and figures (i.e., do not renumber each major section).

c. Exhibits. Show all exhibits as figures with figure numbering for easy referencing. Place figures, small maps, and tables at the back of the report and reference them in the text. Place large figures (11 in x 17 in format) in either Appendix A or B. Removing the figures and tables from the text allows for easier reading and review of the report, quicker access to a desired page number, and more effective positioning and access of materials that are used to support the text.

d. Technical Reports. Provide a summary or reference the information provided in the technical reports.

e. Cross References. Provide cross-references to information provided elsewhere in the report (e.g., other sections, figures, appendices).

f. Checklist. Section 12-3.09 provides a checklist that may be used to ensure all applicable project information, certifications, coordination, and other requirements are covered in the State Improvement Report.

3. Content. The content of a State Improvement Report will be based on project complexity:

a. Design Features. These projects are major reconstruction or new construction type of improvements that may or may not involve an existing highway alignment or street. List and discuss the design guidelines used for the proposed improvement.

b. Environmental Information. Use the ECAD record form as a checklist to determine the potential project impacts. Most projects will be the Categorical Exclusion type or occasionally will require an Environmental Assessment type analysis. Include a summary and analysis of the environmental impacts.

c. Public Involvement. Include a summary and analysis of the comments and concerns received as a result of public involvement. One or two informational meetings should be held and an offer to hold a public hearing should be made.

e. Estimate of Costs. Provide cost estimates by usable segments, if applicable, or for an isolated project in accordance with the format in Section 12-4 and Chapter 65.

12-3.06 Project Reports

A Project Report documents a construction project which uses an existing alignment, roadway, and right-of-way or, possibly, some minor relocations. It could be prepared for a Federal or State-only funded project. These types of projects typically qualify as Categorical Exclusions and, therefore, the environmental documentation is included in the Project Report. Also, see Section 12-1.02. When preparing a Project Report, consider the following:

1. Format. The Project Report should have the following generalized format:

   - table of contents;
   - Project Report Approval Form (see Figure 12-5B);
   - text of report; and
   - exhibits (e.g., plan and profile sheets, aerial photograph, maps) located in the back of the report on 11 in x 17 in sheets. Designate each different exhibit as a "Figure" and, if figures are depicting the same information but at different locations, label each exhibit as Sheet ___(No.)___ of ___(No.)___.

2. Page Numbering. Provide consecutively numbered pages for the report. Also, provide page numbers for all figures in the exhibit sections.

3. Cross References. Make cross-references between related areas and to figures contained in the exhibit section of the report.

4. Content. Information placed in a Project Report should reflect appropriate engineering and environmental investigations and should indicate compatibility with current Department criteria. The project study should meet the requirements for public involvement (Chapter 19), environmental analyses (Part III, Environmental Procedures), and engineering analyses (Section 11-2). Figure 12-3A provides an outline of the information, as applicable, that should be included in a Project Report. Also, review the items listed on the Fact Sheets for an Abbreviated Project Report as shown in Section 12-3.07.

5. Checklist. Section 12-3.09 provides a checklist that may be used to ensure all applicable project information, certifications, coordination, and other requirements are covered in the Project Report.

TABLE OF CONTENTS FOR PROJECT REPORT

Page

Title Sheet
Table of Contents
Project Report Approval Form (see Figure 12-5B)

I. NEED FOR IMPROVEMENT

A. Project Location and Termini
1. Functional classifications and local name(s)
2. Regional location — Note the project/route location with respect to other major routes, municipalities, and geographical markers
3. Limits, county, municipality, maintenance jurisdictions (who owns road)
4. Separate classifications (e.g., SRA, truck routes, NHS)

B. Description of Existing Conditions
1. Land use (along route and in project vicinity)
a. Residential, commercial, industrial
b. Historical sites
c. Schools, parks, forest preserves, etc.
2. Existing Cross Section
a. Number of lanes, parking, shoulders and/or curb and gutter, sidewalk, median (type), and right-of-way (see Item VII. B. Typical Cross Sections); typical sections should also include pavement composition
b. Existing drainage (brief description of open/closed system and record of flooding)

C. Operational and Safety Analyses
1. Why project was initiated (need)
a. Safety concerns - include brief crash summary (e.g., number of crashes, predominant crashes and causes, HALs)
b. Pavement condition
c. Operational concerns/capacity
d. Existing geometry and profile
e. Structural deficiencies
f. Local interest
2. Relationship to other projects (past, current, future)

D. Project Purpose/Identified Deficiencies (general statement)

Note: Table of Contents may be modified as necessary depending on the proposed improvement.

TYPICAL TABLE OF CONTENTS FOR PROJECT REPORT
Figure 12-3A

TABLE OF CONTENTS
(Continued)

Page

II. DESCRIPTION OF PROPOSED IMPROVEMENT (only include items relevant to project)

A. Introduction
This section is not intended to be lengthy, but should include the following:
1. General scope of work
2. Relationship to the purpose and need for improvement

B. Design Criteria Utilized
Note design criteria (e.g., 3R, reconstruction) used in developing improvement. For example: Chapter 49 "3R Guidelines for Rural and Urban Highways"

C. Geometric Improvements
Include reasons for each of the following:
1. Typical roadway template (proposed cross section)
2. Intersections
3. Vertical alignment — lower or raise the profile (safety and drainage)
4. Horizontal alignment — correct sight distance problem/deficient curves, revise superelevation, correct broken back alignments, etc.
5. Unique considerations

D. Preliminary Pavement Design/Rehabilitation
1. Need for Geotechnical Survey
2. Documentation for pavement design or rehabilitation of pavement
3. Statement if cold milling is proposed

E. Pavement Drainage
1. Describe existing system and any proposed improvements
2. Reference Preliminary Drainage Study or Hydraulic Report, as applicable

F. Design Exceptions
Include all design exceptions/waivers as approved by BDE and/or FHWA. Typically, these are discussed and concurrence is received at district coordination meetings.

G. Right-of-Way
1. Acquisition required
   a. Total parcels
   b. Land use summary
   c. Total area

TYPICAL TABLE OF CONTENTS FOR PROJECT REPORT
Figure 12-3A
(Continued)

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(Continued)

Page

2. Permanent easements required
   a. Total parcels
   b. Land use summary
   c. Total area
3. Temporary easements required
   a. Total parcels
   b. Land use summary
   c. Total area
4. Residential/business displacement (see Plan Sheets and Part III, Environmental Procedures, for discussion)
5. If no ROW acquisition is required, then include a statement to this effect.

H. Structures

This section is to be more detailed than Section I, Need for Improvement, and will function as a "quick-look" reference area (see Bridge Condition Report (BCR) and information listed in Abbreviated Project Reports):

1. Feature carried
2. Feature crossed and adjacent land use
3. Structure number
4. Existing structural deficiencies
5. Proposed scope of work and cross section (e.g., deck replacement, superstructure replacement, bridge removal/replacement, in-stream work, widening)
6. Vertical clearances — deficient or the need for restrictions on resurfacing projects
7. Indicate whether foundation borings requested and/or completed. If completed, include in Project Report (supplement)
8. Include memo from Bureau of Bridges and Structures approving BCR
9. Reference coordination meeting with BDE for cross section concurrence

I. Traffic Signal Modernization/Installation

1. Location(s)
2. Description of work (e.g., modernizing, interconnect, pre-emption, railroad crossing, installation)
3. Reference signal warrants(s) met
4. Local participation (e.g., construction costs, maintenance responsibility, maintenance costs, energy costs).

TYPICAL TABLE OF CONTENTS FOR PROJECT REPORT
Figure 12-3A
(Continued)

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(Continued)

Page

J. Lighting
   1. Existing conditions (Lighting Survey)
   2. Maintenance responsibility
   3. Proposed improvement
   4. Funding responsibility

K. On-Street Parking
   1. Existing conditions (e.g., parallel/diagonal, peak-hour restrictions, metered), include limits, municipality, and parking use (e.g., residential, commercial)
   2. Proposed improvement — Describe whether parking lanes are removed, replaced, resurfaced, reconstructed, or relocated
   3. Local participation

L. Sidewalks/ADA Requirements
   1. Existing conditions (e.g., width, continuous, location)
   2. Proposed improvement (e.g., new, repair, width, location, local coordination, accessible for disabled persons)
   3. Local participation
   4. If no sidewalks exist and/or no new sidewalks requested, include statements to this effect

M. Bikeways/Trails
   1. Note if route is a recommended road bicycle route or if there is another recommended (alternative) route in the proximity of the improvement
   2. Existing trails in the proximity of the improvement
   3. Bicycle generators in the area
   4. Local coordination to determine any planned facilities
   5. How project addresses bicycle usage (include specific improvements such as wider lanes, separate path, etc.)
   6. If the improvement does not accommodate bicycle use, then complete the Bicycle Checklist as discussed in Chapter 17

N. Pedestrian Overpass/Subways/Other Facilities
   1. Existing — Describe pedestrian generators, crashes, and other features that would necessitate a grade separated pedestrian facility
   2. Proposed — Discuss proposed work and how it will accommodate pedestrians and provide benefits (e.g., safe access to parks/schools/public facilities/ commuter stations/bus stops, aesthetics, safety)

TYPICAL TABLE OF CONTENTS FOR PROJECT REPORT
Figure 12-3A
(Continued)

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Page

O. Mass Transportation
1. Existing services (e.g., bus, train, shuttle (include route numbers))
2. Describe existing facilities (e.g., pedestrian accessible, park and ride lots, kiss and ride locations, commuter stations, bus stops (near side/far side))
3. Will project improve access to mass transportation (e.g., bus turnouts, bus pads, shelters, signal work)

P. Utility Conflicts
1. Identify utilities that were contacted and those that responded to having facilities within the project limits
2. Describe conflicts with these utilities due to the proposed improvement (e.g., changes in horizontal and vertical alignment, widening, replacement of bridge deck or superstructure, trenching, boring for conduits, storm sewer)

Q. Encroachments
1. Existing (e.g., illegal parking, ROW infringements)
2. Proposed remediation of encroachments
3. Reference letters sent to property owner about encroachments

R. Mail Delivery
1. Type of drop-off (e.g., locations, door-to-door, streetside)
2. Hazardous mailbox supports (reference letters sent to property owners); see Chapter 58
3 Improvement's impact on mail delivery (need to contact local postmaster)
4. Mailbox turnouts (shoulder section versus curb and gutter); see Chapter 58

S. Landscape/Roadside Development
1. Note all areas disturbed by construction to be restored to turf cover
2. Note all tree and other plants removed for construction and which will be replaced; see Chapter 59
3. Summarize the results of the vegetation assessment survey

T. Erosion Control
If soil is exposed to displacement, include erosion control documentation; see Chapter 59

TYPICAL TABLE OF CONTENTS FOR PROJECT REPORT
Figure 12-3A
(Continued)

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U. At-Grade Railroad Crossings
1. Location and rail line (e.g., Union Pacific, Wisconsin Central, CTA "L").
2. Existing conditions
   a. railroad crossing flashers, gates, and pedestrian gates
   b. proximity of train stations or stops
   c. number of tracks and alignment of crossing
   d. crash history at crossing
3. Proposed improvement — In addition to roadway work, include the results of the coordination with the Railroad Unit to determine proposed improvements (e.g., rail replacement, rehabilitation, changes in gate/flasher (preemption) timing).
4. Train interruptions/detour routes
5. Proximity of traffic signals and preemption. Include results of discussions with the district Bureau of Operations to identify signal sequence and preemption at the crossing. Describe existing (or the need for) near side traffic signals that stop traffic in advance of the crossing; see Section 36-8.
6. Coordination with Illinois Commerce Commission

V. Surveillance
1. Existing surveillance within or in the proximity of the proposed improvement (e.g., changeable message signs, detector loops, volume/speed loops, video detection/monitors)
2. Proposed surveillance for the improvement
3. Results of coordination with the district Bureau of Operations (Bureau of Traffic, District 1), where necessary

W. Pump Stations

The electrical requirements associated with pump stations are determined and designed by the Bureau of Electrical Operations (District One) and Bureau of Operations in other districts. The roadway collection system, pump capacity, pump discharge, storm water storage, and outlet evaluation are detailed in the Hydraulics Report prepared by the Hydraulics Unit in the district. For this section of the Project Report, provide the following general information, while referencing the Hydraulics Report for the more detailed, technical information:

- pump station number and location,
- roadway limits that are drained by the pump station,
- outfall location, and
- proposed improvements as directed by Hydraulics Unit.

TYPICAL TABLE OF CONTENTS FOR PROJECT REPORT
Figure 12-3A
(Continued)

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X. Retaining Walls
a. Existing retaining walls within and/or affected by the improvement.
b. Proposed retaining walls that are required as a result of improvement (e.g., profile adjustments, regrading near bridge abutments, sidewalk separations). Walls over 10 ft (3 m) high are either designed by Bureau of Bridges and Structures or the design is reviewed by Bureau of Bridges and Structures.
c. Provide information on length and height (exposed) so that the design squad can determine need for consultant services.
d. Indicate whether foundation borings requested/completed. If completed, include as supplement.

III. ENVIRONMENTAL SURVEY SUMMARIES

For documentation requirements in the Project Report, see Section 12-3.09.

IV. TRAFFIC MANAGEMENT ANALYSIS AND RECOMMENDATIONS

See Chapters 13 and 55 to determine type and cost of traffic management for proposed improvement.

V. ESTIMATE OF COSTS

See Section 12-4 and Chapter 65 for details on cost estimates for Project Reports.

VI. COMMITMENTS

A. Environmental (e.g., permits, restricted areas, tree cutting, wetland mitigation)
B. Property owner/local/forest preserve/transit company
C. Other agencies (e.g., IDNR, Agriculture, U.S. Army Corps of Engineers)

These commitments require review by the Project and Environmental Studies Section Chief and by the Environmental Unit Head in District 1 and by the Project Engineer and Environment Studies Supervisor in other districts. Discuss these commitments with Phase II design squad and with construction personnel.

VII. EXHIBITS
A. Location Maps
B. Typical Cross Sections

TYPICAL TABLE OF CONTENTS FOR PROJECT REPORT
Figure 12-3A
(Continued)

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(Continued)

Page

C. Traffic Diagrams of Overall Street Network
D. Existing Conditions (Aerial Photography)
E. Proposed Conditions (Plan and Profile Sheets in 11 in x 17 in format)
F. Approved Intersection Design Studies (Reduce to 11 in x 17 in format)
G. Overall Schematic of Horizontal Control and Curve Data
H. Vertical Curve Data

VIII. COORDINATION/DOCUMENTATION

Provide copies of correspondence, coordination, minutes of meetings, and a summary of public involvement needed and completed.

A. Environmental Correspondence/Permits
B. Metro/State Clearinghouse Signoffs
C. District Coordination Meeting Minutes
D. Coordination
   1. Municipalities/counties
   2. Parks and forest preserves
   3. Mass transit agencies
   4. Other agencies (utilities, railroads, etc.)
E. Public Involvement
   1. Property owner letters or contacts
   2. Other correspondence
   3. Summary of Informational Meetings/Public Hearings

IX. TECHNICAL REPORTS

A. Air Quality
B. Noise/Construction Noise
C. Crash Analysis
D. Vegetation Assessment/Survey
E. Bridge Condition Report
F. Geotechnical Survey
G. TMA Report
H. Other

X. PRELIMINARY DRAINAGE STUDY

If needed, prepare as a separate technical report.

TYPICAL TABLE OF CONTENTS FOR PROJECT REPORT
Figure 12-3A
(Continued)

12-3.07 Abbreviated Project Reports

For some 3R type projects and replace-in-kind reconstruction projects, an Abbreviated Project Report format may be used to document the results of a Phase I engineering study. This format eliminates considerable writing and provides an easy-to-follow checklist, fill-in-the-blanks, and attachments type report.

Only use an Abbreviated Project Report when the environmental and engineering impacts of a project can be adequately described by completing the Fact Sheet and by use of attachments. However, if the project information as described in Part III, Environmental Procedures, requires the preparation of a narrative type report for adequate coverage, then use the Project Report format described in Section 12-3.06.

The recommended format of an Abbreviated Project Report can be found in the following figures as applicable:

- Figure 12-3B, Fact Sheet (Roadway Improvement); and
- Figure 12-3C, Fact Sheet (Total Structure or Superstructure Replacement).

As an exhibit, include a copy of the applicable district coordination meeting minutes. This documentation describes the proposed improvement and lists the decisions made at those meetings. A typical example of these meeting minutes is shown in Figure 12-3D.

ABBREVIATED PROJECT REPORT
ILLINOIS DEPARTMENT OF TRANSPORTATION

1. PPS (Project Planning System) No.: _____
2. Contract No.: _____
3. State Job No.: _____
4. Highway Functional Classification: _____
5. Truck Route Classification: _____
6. Type of Improvement: _____ W & RS or _____ RS
   If other type of improvements, attach description: _____
7. Proposed Project Funding (Must be compatible with selected design guidelines.): _____
8. Current ADT: _____ % Trucks in ADT: _____
9. Surrounding Land Use: _____
10. Existing Right-of-Way Width: _____ Proposed: _____
11. Existing No. of Lanes: _____ Proposed: _____
12. Existing Roadway Width: _____ Proposed: _____
13. Existing Traveled Way Width: _____ Proposed: _____
14. Pavement Surface Condition (CRS): _____ (Year): _____
15. Existing Shoulder or Curb Type: _____ Proposed: _____
16. Existing Clear Zone Width: _____ Proposed: _____
17. Describe existing conditions or proposed highway improvements adjacent to project limits: _____
    _____
18. Are there any bridges in this construction section? _____ Yes ____ No. Can they all remain in place? _____ Yes _____ No. Give description of what must be done to each bridge in this segment and when work will be accomplished (See Figure 12-3C): __
    _____
19. What has the field check indicated for culvert extensions, side road culvert improvements, and other safety work: _____
    _____
    _____

FACT SHEET
(Roadway Improvement)

12-3(22)

Figure 12-3B

Use a straight-line diagram or schematic plan to indicate proposed work including culvert extensions, guardrail, etc.

20. Will ditch cleaning be necessary with this improvement? _____ Yes _____ No

21. What has a review of crash data shown? _____

_____

_____

22. Existing Rural Posted Speed: _____ Urban Posted Speed:_____

23. Proposed Rural Design Speed: _____

Proposed Urban Design Speed: _____

24. Check design policy used:

_____ 3R criteria for arterial highways and bridges for other than expressways and freeways on the Federal-aid Highway System (See Chapter 49)

_____ 3R criteria for highways and bridges on unmarked routes of the State Highway System (See Chapter 49)

_____ Other (list): _____

25. List and indicate reasons for any design exceptions: _____

_____

_____

Does existing highway geometry meet IDOT criteria?

Horizontal: _____ Yes _____ No

Vertical: _____ Yes _____ No

If "No" is checked, discuss what will be done: _____

_____

FACT SHEET
(Roadway Improvement)

Figure 12-3B
(Continued)

Is resurfacing thickness in accordance with Department pavement rehabilitation criteria (see Chapter 53)?

_____ Yes _____ No; Reason(s) _____

26. How will traffic be maintained during construction? _____

27. RR Data: Trains/Day _____ # Tracks _____ Speed of Trains _____

28. RR Crossing Protection: Existing: _____ Changes Proposed: ____ Yes ____ No

29. Type of proposed improvements at RR crossing: _____

30. Sidewalks: Existing: _____ Proposed: _____

31. Parking: Existing: _____ Proposed: _____

32. Will signals be installed or modernized? _____

33. Lighting: _____

34. Utilities/Encroachments: _____

35. Drainage (flood plain, detention, flooding over the roads, etc.): _____

36. Any Section 4(f) sites on Federal-aid projects? _____ Yes _____ No

37. Is an environmental survey request required by Department policy? _____ Yes _____ No

38. Clearinghouse Sign-Off for Federal-Aid Projects:

State: _____ Date: _____

Metro: _____ Date: _____

39. If applicable, Metropolitan Planning Organization approval date: _____

40. Permit Status (Sections 404, 402, and 10 Permits, 401 Certification, etc.): _____

41. Have any special erosion control or tree retention commitments been made?

___ Yes ___ No

If yes, has the district Landscape Architect/Specialist reviewed the commitments?

___ Yes ___ No

42. If soil is exposed to displacement, include erosion control documentation (see Chapter 59).

FACT SHEET
(Roadway Improvement)

Figure 12-3B
(Continued)

43. Roadway Exhibits: Page No.

- Completed Estimate of Costs (see Figure 12-4B): _____
- Concurrence Letter for Funding Participation: _____
- IDOT TIP Sheet: _____
- Location Map and Aerial Photography (use 11 in x 17 in format): _____
- Profile Gradelines of Existing Alignment, Any Corrections, and Topographic Mapping for Alignment and Profile Changes: _____
- List of Existing Horizontal Curvature From Road Plans and Superelevation Rates From Field Check (if applicable): _____
- Typical Roadway Cross Sections (existing and proposed): _____
- BDE Approval Memorandum on Resurfacing Thickness Deviation (if applicable): _____
- Crash Analysis and Schematic Drawing of Crashes (Collision Diagram) for Previous Three Years: _____
- Wet-Weather Skid Crash Analysis: _____
- Resolution of Any Encroachments on ROW: _____
- Archaeological/Biological Sign-off (where applicable) or Evidence of the Results of Surveys and Related Coordination: _____
- Noise Statement for Projects with Alignment Changes or Noise Abatement: _____
- Coordination and US Army Corps of Engineer, Section 404 Permit Status If Bridges are Involved: _____
- Route Improvement Plans for Adjacent Districts: _____
- Agency Coordination Letters: _____
- Utility Coordination: _____
- District Coordination Meeting Minutes (See Figure 12-3D): _____
- Public Involvement Comments and Responses (if applicable): _____
- Discussion of Mailbox Supports: _____
- List Commitments with Discussion of Each: _____
- Airport Clearance Coordination (if applicable): _____
- Drainage/Hydraulic Reports (summary): _____
- Approved Intersection Design Studies: _____
- TMA (Traffic Management Analysis) Report and Approval Memorandum: _____

FACT SHEET
(Roadway Improvement)

Figure 12-3B
(Continued)

ABBREVIATED PROJECT REPORT
ILLINOIS DEPARTMENT OF TRANSPORTATION

1. PPS (Project Planning System) No.: _____
2. Contract No.: _____
3. State Job No.: _____
4. Highway Functional Classification: _____
5. Truck Route Classification: _____
6. Is project eligible for HBRRP funds? _____ Yes _____ No
7. Current ADT: _____ % Trucks in ADT: _____
8. Name of Stream or Crossing: _____
9. Surrounding Land Use: _____
10. Existing Approach Roadway Width: _____ Proposed: _____
11. Existing Traveled Way Width: _____ Proposed: _____
12. Existing Shoulder Type: _____ Proposed: _____
13. Existing Shoulder Width: _____ Proposed: _____
14. Existing Clear Roadway Bridge Width: _____ f-f Proposed: _____ f-f
15. Are sidewalks warranted? _____ Yes _____ No
16. Existing Posted Speed: _____
17. Proposed Rural Design Speed: _____ Proposed Urban Design Speed: _____
18. Check Design Policy Used:

    _____ 3R criteria for arterial highways and bridges for other than freeways and expressways on the Federal-aid System (see Chapter 49)

    _____ 3R criteria for highways and bridges on unmarked routes of the State Highway System (see Chapter 49)

    _____ Other (List): _____

19. Does existing highway geometry meet IDOT criteria?

    Horizontal: _____ Yes _____ No (discuss): _____

    Vertical: _____ Yes _____ No (discuss): _____

FACT SHEET
(Total Structure or Superstructure Replacement)

Figure 12-3C

20. List and indicate reasons for any design exceptions: _____

_____

_____

21. Are proposed clear roadway bridge width and alignment compatible with existing and proposed bridge widths within adjacent roadway sections assuming logical segments?

_____ Yes _____ No, Discuss: _____

22. Any crash problems on or adjacent to bridge: _____ Yes _____ No, Discuss: _____

_____

23. Is channel work required? _____ Yes _____ No

24. Hydraulic Information or Attach Waterway Table (where applicable).

a. Drainage Area: _____ acres (hectares)

b. Existing Opening: _____ sq ft (m^2)

c. Required Opening: _____ sq ft (m^2)

d. Proposed Opening: _____ sq ft (m^2)

e. Q ( ): _____ cu ft/s (m^3/s)

Discuss Results: _____

25. Has Bureau of Bridges and Structures concurred in Proposed Bridge Drawings and Bridge Condition Report? _____ Yes _____ No

26. Has District Bridge Engineer made a recent field inspection of abutments and piers?
_____ Yes _____ No

27. Comments on Field Check: _____

28. Is an environmental survey request required by Department policy? _____Yes _____ No

a. Any Wetlands Involved in Reconstruction: _____ Not Applicable: _____

b. 4(f)/106 Involved on Federal-aid Projects: _____ Not Applicable: _____

FACT SHEET
(Total Structure or Superstructure Replacement)

Figure 12-3C
(Continued)

c. Illinois Department of Natural Resources, Office of Water Resources:

Status of Flood Plain Permit: _____ Not Applicable: _____

29. Are Sections 404, 402, and 10 Permits and Section 401 Certification required for channel work, runaround detours, etc.? _____ Yes _____ No Status of Permit: _____

30. Status of Other Permits (see Chapter 28): _____

31. Is this a historic bridge? _____ Yes _____ No If yes, discuss: _____

32. If applicable, Metropolitan Planning Organization approval date: _____

33. Clearinghouse Sign-Off for Federal-Aid Projects:

State: _____ Date: _____

Metro: _____ Date: _____

34. What method will be used to detour or maintain traffic during construction (Traffic Management Analysis Report)?_____

35. Have any special erosion control or tree retention commitments been made?

_____ Yes _____ No

If yes, has the district landscape architect/specialist reviewed the commitments?

_____ Yes _____ No

If soil is exposed to displacement, include erosion control documentation (see Chapter 59).

36. Structure or Superstructure Replacement Exhibits: Page No.

- Completed Estimate of Costs (See Figure 12-4B): ..... _____
- Concurrence Letter for Funding Participation: ..... _____
- IDOT TIP Sheet: ..... _____
- Location Map and Aerial Photography (use 11 in x 17 in format): . _____
- Profile Gradeline of Existing Alignment, Any Corrections and Topographic Mapping for Alignment and Profile Changes: ..... _____
- List Existing Horizontal Curvature From Road Plans and Super-elevation Rates From Field Check (if applicable): ..... _____

FACT SHEET
(Total Structure or Superstructure Replacement)

Figure 12-3C
(Continued)

- Typical Roadway Cross Sections (existing and proposed): ..... _____
- Typical Section Existing Structure: ..... _____
- Proposed Bridge Drawings and Memorandum Approving Each Bridge Condition Report(s): ..... _____
- Color Photographs of Existing Bridge(s): ..... _____
- Other Items for Approach Roadway (if applicable): ..... _____
- Crash Analysis Schematic Drawing of Crashes (Collision Diagram) 0.5 miles (800 m) on Each Side of Bridge: .... _____
- Wet-Weather Skid Crash Analysis: ..... _____
- Resolution of Any Encroachments On ROW: ..... _____
- Archaeological/Biological Sign Off (where applicable), or Evidence of the Results of Surveys and Related Coordination: .... _____
- Noise Statement for Projects with Alignment Changes or Noise Abatement: ..... _____
- Coordination With U.S. Army Corps of Engineer, Section 404 Permit Status: ..... _____
- Agency Coordination Letters: ..... _____
- Utility Coordination: ..... _____
- District Coordination Meeting Minutes (see Figure 12-3D): ..... _____
- Public Involvement Comments and Responses (if applicable): ..... _____
- List Commitments With Discussion of Each: ..... _____
- Airport Clearance Coordination (if applicable): ..... _____
- TMA (Traffic Management Analysis) Report and Approval Memorandum: ..... _____
- Drainage/Hydraulic Reports (summary): ..... _____

FACT SHEET
(Total Structure or Superstructure Replacement)

Figure 12-3C
(Continued)

ILLINOIS DEPARTMENT OF TRANSPORTATION

COORDINATION MEETING MINUTES DISTRICT 3 CONFERENCE ROOM			TOPIC NO. 9
DATE OF MEETING:	January 29, 1998	FUNDING SOURCE:	STP
ROUTE:	FAP 41		
MARKED ROUTE:	Illinois 17	DESIGN GUIDELINES USED:	3P
LOCAL NAME:	N/A	FUNCTIONAL CLASSIFICATION: East of CH 6 - Urban Other Principal Arterial West of CH 6 - Rural Minor Arterial	
SECTION:	(11, 12) RS-3	DESIGN SPEED:	55 mph (90 km/h)
COUNTY:	Kankakee	POSTED SPEED:	55 mph
ADT:	Herscher Rd. to Warner Bridge Road - 3,850/1997/10.4 Warner Bridge Road to Kankakee City Limits - 9,400/1997/5.4		

1. **LIMITS OF PROJECT:** The project begins approximately 0.75 miles (1.2 km) east of Herscher Road and extends east approximately 9.13 miles (14.7 km) to the west Kankakee city limits.

2. **PREVIOUS DATES OF DISCUSSION**: None

3. **PROJECT DESCRIPTION:** The length of roadway to be improved is approximately 9.13 miles (14.7 km). It was originally constructed in 1924 to a width of 18 ft (5.5 m) with a pavement design of 9 in-6 in-9 in (229 mm-152 mm-229 mm) portland cement concrete and earth shoulders.

   In 1961, the roadway was widened to 24 ft (7.32 m) with 9 in (229 mm) portland cement concrete and overlaid with 3.25 in (82 mm) of bituminous asphalt. In 1975, bituminous shoulders 9 in (229 mm) at a width of 1.5 ft (457 mm) were added to each side and the entire roadway given a bituminous overlay of 3 in (76 mm) and aggregate shoulders. In 1986, the shoulders were widened an additional 1.5 ft (457 mm) with 6 in (152 mm) of bituminous concrete to allow for a bituminous shoulder of 3 ft (914 mm). Turn lanes of 12 ft (3.66 m) were also constructed at Lehigh and Limestone Roads with 9 in (229 mm) of bituminous base course. The existing roadway was cold milled 0.625 in (16 mm) and the entire roadway was given a bituminous overlay of 2 in (51 mm). Aggregate shoulders 5 ft (1.52 m) were also added.

   The proposed improvement includes a bituminous concrete overlay of 0.75 in (19 mm) leveling binder and a bituminous concrete overlay of 1.5 in (38 mm) surface course. A 5 ft (1.5 m) aggregate wedge will also be placed. Mr. John Doe of the Bureau of Design and Environment concurred with the scope of work and with the project being processed as a Group I Categorical Exclusion.

4. **TRAFFIC CONTROL:** This project will be constructed using applicable traffic control standards with one lane open to traffic at all times during construction.

5. **REVIEW OF CRASH DATA:** A total of 102 crashes have occurred on this segment of Illinois Route 17 from January 1993 to December 1995. The highest crash pattern was in clear and dry conditions (69 percent). The most common type was animal related (28 percent). No high accident locations (HAL) or wet weather clusters were noted in the project limits.

6. **EXPLANATION OF DESIGN EXCEPTIONS:** No exceptions required.

7. **ENVIRONMENTAL ACTIONS DESIRED:**

   - **NATIONWIDE 404 PERMITS:** N/A
   - **ENVIRONMENTAL SURVEY REQUEST:** N/A
   - **CATEGORICAL EXCLUSION**: Group I Concurred 1-29-98

8. **ADDITIONAL RIGHT-OF-WAY NEEDED**: N/A

9. **ATTACHMENTS**: Location Map(s) attached.

EXAMPLE OF DISTRICT MINUTES
(Coordination Meeting Minutes)

Figure 12-3D

12-3.08 3P and SMART Projects

12-3.08(a) Report Format and Content

To assist the districts in documenting 3P and SMART improvements, see Figures 12-3E and 12-3F, respectively. An important aspect of 3P and SMART improvements is the discussion and presentation of these projects at district coordination meetings. The use at coordination meetings provides the means to discuss design exceptions, how High Accident Locations (HAL) will be addressed, and the need for additional right-of-way. Also, see Section 12-1.02 for further information on 3P and SMART Reports and Chapter 53 for further design details on pavement resurfacing.

After the completed report is signed, transmit a copy of the checklist report plus any attachments to BDE for information and project documentation. In almost all cases, the District Engineer will approve these projects.

12-3.08(b) High-Accident Locations (HAL)

For improvements other than added through lanes; the addition of two-way, left-turn lanes; an intersection improvement; or those involving prohibitive right-of-way, every effort should be made to incorporate HALs into the design of 3P and SMART projects. The following discusses when to incorporate a HAL into a 3P or SMART project and still fund the entire improvement.

There are two levels of HAL investigations and analysis that determine a HAL's impact on a resurfacing improvement. Figure 12-3G may be used to assist in making these determinations. Each investigation and analysis requires engineering judgment and the documentation of conclusions. Also, examine and analyze the following:

- frequency of crashes;
- severity of crashes;
- crash rate;
- delta change;
- predominate type of crashes;
- type of area;
- pertinent history of past improvements;
- an event near or at the location which might have contributed to HAL;
- existing geometrics (e.g., alignment, roadway width, ROW, turn lanes); and
- results of capacity analysis.

If it is determined not to incorporate a HAL into the resurfacing improvement, the HAL must be either an isolated occurrence, or the HAL must be considered not to be correctable as part of the resurfacing project.

To incorporate a HAL into a 3P or SMART project, the HAL must be considered to be recurring when:

- it has been on the HAL list for two out of the last three years; or
- where in the first year on the HAL list, an analysis determines that there is a potential for recurrence (not an isolated occurrence).

When there is a question whether or not a HAL is an isolated occurrence, the district should postpone any improvement to see if it reappears on the next year's HAL listing.

ILLINOIS DEPARTMENT OF TRANSPORTATION

Project Engineer: _____

Key Route: _____ Section: _____ County: _____
Functional Classification: _____ Marked Route: _____
Termini: _____ Program Estimate: _____
PPS No.: _____
Contract No.: _____ SJN: _____ Program No.: _____
Fund Year: _____ Fund Type: _____ Project Length: _____
CRS/Year: _____ Total ADT/Year: _____ Truck ADT/Year: _____
No. of High Accident Locations (HAL): _____ Crash Rate/Statewide Average: _____
Total Cost Estimate: _____ Cost/mile(km): _____ HAL Cost: _____
Existing Rdwy Width: ____ Exist. Median Type & Width: _____ No. of Thru Lanes: _____
Existing Shldr Width: _____ Exist. Shldr Type: _____ Proposed Shldr Type: _____
Existing Pavement Width: _____ Existing Pavement Type: _____
Proposed Resurfacing Thickness: _____ Exception to Policy: ____ No ____ Yes. If yes, has Bureau of Design and Environment approval been obtained? ____ Yes ____ No (Attach copy)
Percent Patching Proposed: _____

Answer the following items Yes or No or fill in the blanks. If marked yes, an attachment may be necessary to explain the answer:

		Yes	No
1a.	Is improvement on the National Highway System (NHS)?	____	____
1b.	Is highway a designated truck route?	____	____
2.	Any design exceptions required? (Attach minutes of coordination meeting)	____	____
3.	Are curb repairs necessary? Existing curb and gutter type: _____ length: _____	____	____
3a.	Do gutter sections exist in rural areas? If yes, attach explanation for resurfacing	____	____
4.	Are ramps for disabled persons proposed at intersections?	____	____
5.	Do sidewalks exist? Existing width: _____	____	____
6.	Is sidewalk construction or repair proposed?	____	____
7.	Do bike lanes exist along street or on shoulder? (Attach explanation)	____	____
8.	Is bike lane resurfacing proposed?	____	____
9.	Are new bike lane accommodations proposed? (Attach cross section and explain)	____	____
10.	Is local agency involved with project? If yes, name of agency: _____	____	____
10a.	Is agency notified or agreement signed/pending?	____	____
11.	Do parking lanes exist within project limits?	____	____
11a.	If yes, is local participation secured?	____	____
12.	Does pavement flooding exist?	____	____

PAVEMENT PRESERVATION PROJECT (3P) REPORT

Figure 12-3E

13. Do storm sewer inlets need repairing or replacement? ..... ____ ____
14. Do drainage problems exist?..... ..... ____ ____
15. Is cold milling of old surface proposed? Reason: _____ ____ ____
16. Are geometric revisions required? (Attach description for this design exception) ..... ____ ____
17. If HALs exist, can they be corrected by resurfacing or by a superelevation improvement?____ ____
18. Is 3R Spot Improvement proposed to correct HAL? ..... ____ ____
    (If yes, attach analysis and coordination meeting minutes)
19. Number of intersections that may require improvements within next 10 years: _____
20. Structure numbers of bridges within project limits that may need improvement within next 10 years: _____
21. Is bridge resurfacing proposed? _____ No _____ Yes (Attach BB&S concurrence)
22. Project discussed and reviewed at coordination meeting on: _____
23. Other comments: _____
    _____
    _____

PAVEMENT PRESERVATION PROJECT (3P) REPORT

Figure 12-3E

(Continued)

CATEGORICAL EXCLUSION STATEMENT
(Check one and provide information indicated)

☐ Group I

"This project is of a type which qualifies as a Categorical Exclusion Action. It has been determined not to involve any Potential for Unusual Circumstances. Therefore, it is eligible to be processed as a Group I Categorical Exclusion."

Design Approval by: _____
District Engineer of District _____ Date

*Design Exception
Approval (if applicable): _____
Bureau of Design and Environment - Regional Field Engineer Date

☐ Group II

"It has been determined this project will involve one or more of the factors indicating a Potential for Unusual Circumstances. Group II Categorical Exclusion concurrence for this project was obtained from the FHWA (for federal projects)/BDE (for non-federal projects) on _____. Documentation of the concurrence is attached."

*Bureau of Design & Environment
Approval (if applicable): _____
Regional Field Engineer Date

FHWA Concurrence
(if applicable): _____
FHWA Representative Date

District Approval
(if applicable): _____
District Engineer of District _____ Date

*See _____ Coordination Meeting Minutes.

PAVEMENT PRESERVATION PROJECT (3P) REPORT
(Approval Form)

Figure 12-3E
(Continued)

ILLINOIS DEPARTMENT OF TRANSPORTATION

Project Engineer: _____

Designer: _____

Key Route: _____ Section: _____ County: _____
Functional Classification: _____ Marked Route: _____
Termini: _____
Project Length: _____ Net Length: _____
Contract No.: _____ Program No.: _____ Program Estimate: _____
State Job No.: _____ PPS No.: _____
Fund Year: _____ Fund Type: _____
CRS: _____ From: _____ To: _____ Distresses: _____
CRS: _____ From: _____ To: _____ Distresses: _____
CRS: _____ From: _____ To: _____ Distresses: _____
For Marked Routes, CRS ≥ 5.0 and ≤ 6.0: Y/N ____ For Unmarked Rtes, CRS ≥ 4.0 and ≤ 5.4: Y/N ____
Total ADT/Year: _____ MU ADT/Year: _____
No. of High Accident Locations (HAL): _____ Crash Rate/Statewide Average: _____
Total Cost Estimate: _____ Cost/mile (km): _____ HAL Cost: _____
Total Cost of Items 2a – 2e _____ Less than 15% of Total Cost Estimate? Yes/No _____
Existing Rdwy Width: _____ Exist. Median Type & Width: _____ No. of Thru Lanes: _____
Existing Shldr Width: _____ Exist. Shldr Type: _____ Proposed Shldr Type: _____
Existing Pavement Width: _____ Existing Pavement Type: _____
Proposed Resurfacing Thickness: _____ Exception to Policy: Y/N _____
If yes, Has Bureau of Design and Environment Approval Been Obtained? Y/N _____ (Attach copy)
Percent Patching Proposed: _____
If MU ADT is less than 250, is patching ≤ 6%: Y/N ____ If MU ADT 250 – 500, is patching ≤ 5%: Y/N __

Answer the following items Yes or No or fill in the blanks. If marked yes, an attachment may be necessary to explain the answer:

		Yes	No
1a.	Is improvement on the National Highway System (NHS)?	____	____
1b.	Is highway a designated truck route?	____	____
2.	Any design exceptions required? (Attach minutes of coordination meeting)	____	____
2a.	Spot guardrail updates or repairs	____	____
2b.	Minor spot drainage improvements	____	____
2c.	Manhole or inlet adjustments off of pavement	____	____
2d.	Isolated ditch cleaning	____	____
2e.	Isolated entrance culvert replacement	____	____
3.	Is local agency involved with the project?	____	____
3a.	If yes, name of agency _____ Agency notified or agreement signed/pending	____	____

SMART PROJECT REPORT

Figure 12-3F

4. Are curb repairs necessary? Existing curb and gutter type: _____ Length: _____ ____ ____
5. Do sidewalks exist? Existing width: _____..... ____ ____
6. Are ramps for disabled persons proposed at intersections?..... ____ ____
7. Do parking lanes exist within project limits?..... ____ ____
7a. If yes, is local participation secured? .... ____ ____
8. Do drainage problems exist?..... ..... ____ ____
9. Do storm sewer inlets need repair or replacement? ..... ____ ____
10. Is cold milling of old surface proposed? ..... ____ ____
10a. If yes, reason for milling: _____
11. Is reflective crack control proposed?..... ____ ____
11a. If yes, have CRS distress requirements been reviewed? ..... ____ ____
12. Are detector loops or traffic counters present? ..... ____ ____
13. Are geometric revisions required? (Attach description for this design exception)..... ____ ____
14. If HALs exist, can they be corrected by resurfacing or by a superelevation improvement?____ ____
15. Is 3R Spot Improvement proposed to correct HAL? ..... ____ ____
(If yes, attach analysis and coordination meeting minutes)
16. Structure numbers of bridges within project limits that may need improvement within next 10 years: _____
17. Is bridge resurfacing proposed? Y/N _____ (Attach BB&S concurrence.)
18. Project discussed and reviewed at coordination meeting on: _____
19. Other comments: _____

SMART PROJECT REPORT

Figure 12-3F

(Continued)

CATEGORICAL EXCLUSION STATEMENT
(Check one and provide information indicated):

☐ Group I

"This project is of a type which qualifies as a Categorical Exclusion Action. It has been determined not to involve any Potential for Unusual Circumstances. Therefore, it is eligible to be processed as a Group I Categorical Exclusion."

Design Approval by: _____
District Engineer of District _____ Date

*Design Exception
Approval (if applicable): _____
Bureau of Design and Environment - Regional Field Engineer Date

☐ Group II

"It has been determined this project will involve one or more of the factors indicating a Potential for Unusual Circumstances. Group II Categorical Exclusion concurrence for this project was obtained from the FHWA (for federal projects)/BDE (for non-federal projects) on _____. Documentation of the concurrence is attached."

*Bureau of Design & Environment
Approval (if applicable): _____
Regional Field Engineer Date

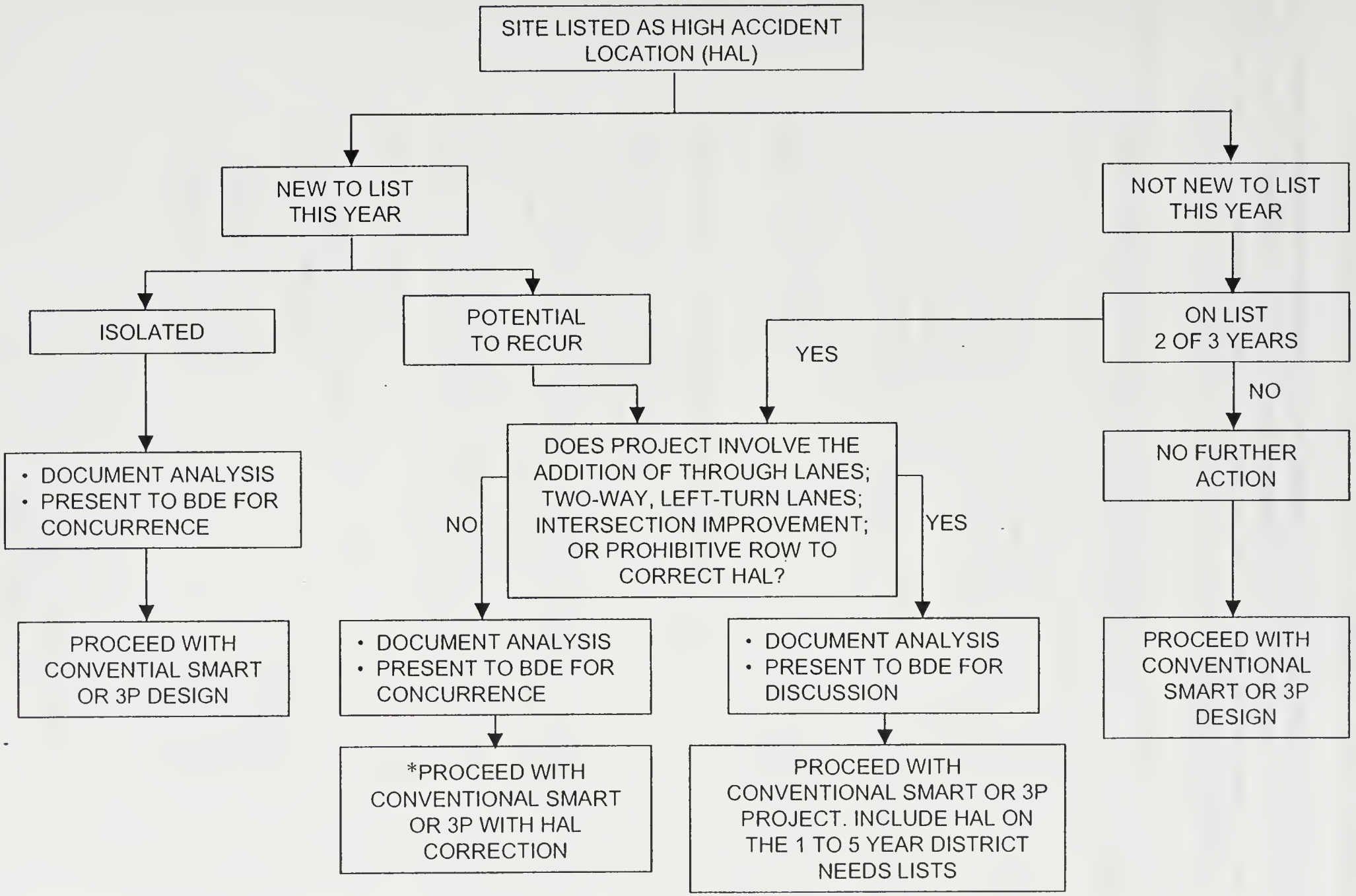
FHWA Concurrence
(if applicable): _____
FHWA Representative Date

District Approval
(if applicable): _____
Date District Engineer of District _____

*See _____ Coordination Meeting Minutes.
Date

SMART PROJECT REPORT
(Approval Form)

Figure 12-3F
(Continued)



*HAL improvement may be constructed prior to or in conjunction with the 3P or SMART Project. If in conjunction with, use separate pay items for the HAL improvement for later evaluation of costs.

GUIDANCE TO INCLUDE HAL INTO 3P OR SMART PROJECTS

Figure 12-3G

12-3.09 Checklist for Phase I Reports

Figure 12-3H presents a checklist which may assist in the preparation of Phase I reports. It ensures that all applicable project information, certifications, coordination, and other requirements are covered in the report. The chapter and section references are for the *BDE Manual* unless noted otherwise. For any topic that does not apply, enter NA in the blank.

This checklist may be included in a Phase I report or with the information submitted with the request for design approval or District Engineer approval.

1. Discussion at District Coordination Meeting (See Section 19-1).

If project was discussed at one or more district coordination meetings, list the date(s) and include a copy of the pertinent parts of the meeting minutes.

Date(s) discussed: _____
See Exhibit(s): _____

2. State Clearinghouse Coordination (See Section 19-1).

Required on projects eligible for Federal funding that meet any of the following criteria:

- involves upgrading of an existing facility or provides new access to an area, in effect, consisting of more than 3R or modernization;
- changes the use, scope, or intensity of use of existing facilities;
- requires additional right-of-way;
- involves potentially significant social, economic, or environmental impacts; or
- requires a Federal license or permit.

Early Warning Notice — Date Submitted: _____
Design Stage Sign-off — Date Submitted: _____
Date Received: _____

3. Environmental Survey Request (See Section 27-1).

Required for any project involving:
- additional ROW or easements;
- drainage structure runaround or any in-stream work; or
- potential effect on a known wetland, recognized natural area/nature preserve, or location where a State or Federal-listed T/E species is known to occur.

Also required for all borrow/contractor-use areas and for certain proposed access control revisions for freeways on the State highway system.

Survey Request Form — Date Submitted: _____

Survey Results/Clearance for:
- Cultural Resources — Date Received: _____ See Exhibit: _____
- Biological Resources — Date Received: _____ See Exhibit: _____
- Wetlands Resources — Date Received: _____ See Exhibit: _____

CHECKLIST FOR PHASE I REPORTS
Figure 12-3H

4. IDNR Prescreening for Endangered and Threatened Species (See Section 22-5).

Required for projects involving other than agricultural cropland or urban properties when the projects will involve acquisition of additional right-of-way or easements; impacts to known locations involving State-listed species or natural areas within existing right-of-way or proposed borrow/contractor use areas.

Prescreening results: Date Received: _____
See Exhibit: _____

Consultation process terminated? Yes_____ No _____

5. Coordination with IDNR (See Section 22-5).

Required for involvement with any of the following:

- Wetlands (see Topic #17)
- Threatened and Endangered Species or Natural Areas (see Topic #20)
- Streams (includes Class I streams and their riparian corridor)
- Forest/Trees (the bisecting of a forest or removal of a significant number of trees)
- Prairie/Savanna Areas
- IDNR Properties
- Nature Preserves/Natural Area Inventory sites or sites on Register of Land and Water Reserves (RLWR)

IDNR response re: Streams, Forest/Trees, Prairie/Savanna Areas, IDNR Properties, Nature Preserves/INAI sites or RLWR sites:

Date: _____
See Exhibit: _____

6. Coordination with US Fish and Wildlife Service for Federal Lands(See Section 22-5).

Required for involvement with Federal Lands—primarily those areas in the Shawnee National Forest.

USFWS Response re: Federal Lands: Date:_____
See Exhibit: _____

CHECKLIST FOR PHASE I REPORTS

Figure 12-3H
(Continued)

7. Section 4(f) Evaluation (See Section 26-2).

Required for use of land from a significant publicly owned park, recreational area, wildlife and waterfowl refuge, or any land from a significant historic site.

FHWA 4(f) Approval: Date:_____
See Exhibit: _____

8. Section 6(f) Land and Water Conservation (LAWCON) Fund Act Conversion Request (See Section 26-3).

Required when lands that have LAWCON funds involved in their purchase or development will be converted to other than public outdoor recreation uses.

NPS 6(f) Conversion Approval: Date: _____
See Exhibit: _____

9. Open Space Land Acquisition and Development (OSLAD) Land Conversion Request (See Section 26-4).

Required when lands that have OSLAD funds involved in their purchase or development will be converted to other than public outdoor recreational uses.

IDNR OSLAD Conversion Approval: Date: _____
See Exhibit: _____

10. Section 106 (National Historic Preservation Act) Compliance (See Section 26-5).

Required when sites on or eligible for the National Register of Historic Places will be affected.

Compliance Documentation: Date: _____
See Exhibit: _____

11. Historic Bridge Compliance (See Section 26-5).

Required when bridge on the Historic Bridge Survey (HBS) is involved.

Compliance Documentation: Date: _____
See Exhibit: _____

CHECKLIST FOR PHASE I REPORTS

Figure 12-3H
(Continued)

12. State Historic Act Compliance (See Section 26-5).

Required when State-only funded project involves impacts to site(s) listed on the Illinois Register of Historic Places or site(s) on or eligible for the National Register of Historic Places.

Compliance Documentation: Date: _____
See Exhibit: _____

13. Flood Plain Encroachment Studies (See Section 26-7 of *BDE Manual* and Section 3-004 of the *IDOT Drainage Manual*).

Required for Federal or State funded projects that would involve encroachments in flood plains as discussed in the cited references.

Flood Plain Encroachment Studies: See: _____

14. Flood Plain Finding (See Section 26-7).

Required when project will entail a significant flood plain encroachment.

FHWA Flood Plain Finding: See Exhibit: _____

15. Wetlands Finding (See Section 26-8).

Required when a project involving Federal funding or approvals involves unavoidable adverse impacts to wetlands.

FHWA Wetlands Finding: See Exhibit: _____

16. Wetlands Mitigation/Compensation Plan (See Section 26-8).

Required for adverse wetlands impacts as directed by the Corps of Engineers Section 404 permit requirements or when the wetlands impacts are subject to compliance with the Illinois Interagency Wetland Policy Act.

Corps Approval of Plan: Date: _____
See Exhibit: _____

IDNR Approval of Plan (See Topic #17).

CHECKLIST FOR PHASE I REPORTS

Figure 12-3H
(Continued)

17. Illinois Interagency Wetland Policy Act Compliance (See Section 26-8).

Required for any project involving adverse impacts to wetlands **except** the following actions which are specifically excluded:

- Activities undertaken for the maintenance of existing ponds, storm water detention basins and channels, drainage ditches, or navigation channels
- Installation of signs, lighting, and fences and the mowing of vegetation within existing maintained rights-of-way, provided these actions do not jeopardize the existence of a threatened or endangered species, Illinois Natural Area Inventory Site, or the designated essential habitat of a threatened or endangered species
- Repair and maintenance of existing buildings, facilities, lawns, and ornamental plantings
- Issuance of permits and licenses
- Construction projects that were let for bidding prior to May 6, 1996
- Application of media (including deicing chemicals) on the surface of existing roads for the purposes of public safety
- Non-surface disturbing surveys and investigations for construction, planning, maintenance, or location of environmental resources

IDNR Response to Wetland Impact Evaluation Form: Date: _____
See: _____

IDNR Approval of Wetlands Compensation Plan: Date: _____
See: _____

18. Wild and Scenic River Act Coordination (see Part III, Appendix C, Section C-1).

Required for Federally assisted projects involving construction which could affect the free-flowing characteristics of a Wild and Scenic River or river designated for study as a potential addition to the National Wild and Scenic Rivers System.

Response from Federal Agency
that Administers River Segment: Date: _____
See Exhibit _____

19. Federal Endangered Species Act Compliance (See Section 26-9).

Required when project will involve Federally listed species or critical habitat.

Response from USFWS: Date: _____
See Exhibit: _____

CHECKLIST FOR PHASE I REPORTS

Figure 12-3H
(Continued)

20a. State Endangered Species and Natural Areas Protection Act Compliance (See Section 26-9).

Required for projects that may adversely affect a State-listed threatened or endangered species or natural area.

Response/Biological Opinion from IDNR: Date:_____
See Exhibit: _____

20b. State Endangered Species Protection Act Incidental Taking Authorization

Required for any project that will result in killing or injuring of a State-listed animal species.

Incidental Taking Authorization recommended? Yes _____ No _____

21. Federal AD1006 Form for Evaluation of Farmland Conversion Impacts (See Section 26-10).

Required for projects that require additional right-of-way outside of any corporate limits unless any one of the paragraphs in Section 26-10.04(b) applies.

AD1006 Form: See Exhibit: _____

22. State Farmland Preservation Act Compliance (See Section 26-10).

Required for State highway and bridge projects funded in whole or in part with State funds and which require additional right-of-way unless any of the paragraphs in 26-10.05(b) apply.

Response from IDOA: Date: _____
See Exhibit: _____

23. Noise Analyses (Including Construction Noise; See Section 26-6).

Required for projects involving the construction of a State highway on new location or the physical alteration of an existing State highway which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes.

Noise Analysis: See: _____

CHECKLIST FOR PHASE I REPORTS

Figure 12-3H
(Continued)

24. Air Quality Conformity Documentation (See Section 26-11).

Required for all State highway projects funded or approved by the FHWA under *Title 23 USC* and to "regionally significant projects" in nonattainment areas, regardless of whether such projects are Federally funded or approved under *Title 23*.

Statement on Conformity: See: _____

25. Air Quality - Microscale CO Analysis (See Sections 23-2.02(e), 24-3.07(e), and 25-3.09(e)).

Potential involvement if the project will have an average daily traffic greater than 16,000 upon completion of the project.

Microscale CO Analysis: See: _____

26. Special Waste Procedures Compliance (See Section 27-2).

Required for all State highway projects.

CERCLIS Statement: See: _____
Results of Screening/Survey (as appropriate): See: _____

27. Section 401 Water Quality Certification (See Section 28-2).

Required for any Federal license or permit that involves a discharge into waters of the United States.

401 Water Quality Certification required? Yes _____ No _____

28. Section 404 Permit (See Section 28-2).

Required for discharge of dredge or fill material into waters of the United States, including wetlands.

Section 404 Permit required? Yes _____ No _____

29. Section 9 Permit (See Section 28-2).

Required for construction of bridges or causeways over navigable waters of the United States.

Section 9 permit required? Yes _____ No _____

CHECKLIST FOR PHASE I REPORTS

Figure 12-3H
(Continued)

30. Section 10 Permit (See Section 28-2).

Required for structures or work (other than bridges and causeways) that affects the navigable waters of the United States.

Section 10 permit required? Yes _____ No _____

31. Section 402 National Pollutant Discharge Elimination System (NPDES) Point-Source Permit (See Section 28-2).

Required for projects, such as rest areas, that involve a point-source discharge of pollutants into waters of the United States.

NPDES point-source permit required? Yes _____ No _____

32. Section 402 NPDES Construction Permit (See Section 28-2).

Required for projects that will involve clearing, grading, and excavation activities that result in the disturbance of 5 acres (2.02 hectares) or more of total land area. Effective March 10, 2003, this permit will be required for projects that will result in the disturbance of one acre (4050 m^2) or more of total land area.

NPDES construction permit required? Yes _____ No _____

33. IDNR/Office of Water Resources Floodway Permit (See Section 28-3).

Required for construction in the floodway of identified streams serving a tributary area of 650 acres (259 hectares) or more in urban areas or 6500 acres (2590 hectares) or more in rural areas.

Floodway permit required? Yes _____ No _____

34. IDNR/Office of Water Resources Public Waters Permit (See Section 28-3).

Required for construction in rivers, lakes, streams, and waterways considered "public waters."

Public waters permit required? Yes _____ No _____

CHECKLIST FOR PHASE I REPORTS

Figure 12-3H
(Continued)

35. IDNR/Office of Water Resources Permit for Floodway Construction in Northeastern Illinois (See Section 28-3).

Required for new construction within the regulatory floodways of rivers, lakes, and streams in Cook, DuPage, Kane, Lake, McHenry, and Will counties, excluding the City of Chicago.

Permit for floodway construction in Northeastern Illinois needed? Yes _____ No _____

36. Hydraulic Analysis/Report (See 2-602 of the *IDOT Drainage Manual*).

Required for all drainage structures designed or reviewed by the central Bureau of Bridges and Structures.

See: _____

37. Coordination with Division of Aeronautics.

Required for projects that have obstructions greater than 12 ft (4 m) height or that are a new vertical or horizontal alignment and that are within 2 miles (3.2 km) of public airports, within 1 mile (1.6 km) of private airports, or within 0.5 miles (800 m) of a restricted landing strip.

Response from Division of Aeronautics: Date: _____
See Exhibit: _____

38. Coordination with Federal Aviation Administration (See Section 11-2).

Required for publicly owned airports.

Response from FAA: Date: _____

See Exhibit: _____

39. Crash Data and Analysis (See Section 11-2).

Required for all projects. (Should include information on wet weather cluster sites.)

See: _____

CHECKLIST FOR PHASE I REPORTS

Figure 12-3H
(Continued)

40. Bridge Condition Report (See Chapter 39).

Required for bridge work.

Bridge Condition Report Approval Letter: See Exhibit: _____

41. Pavement Analysis (See Chapter 54).

Proposed Typical Cross Section or
BDE Approval Letter See: _____

42. Traffic Management Analysis Report (See Chapter 13).

Required to indicate how traffic will be maintained during reconstruction or rehabilitation.

See: _____

43. Geotechnical Report (See Section 11-2).

Required for projects on new alignment or major reconstruction projects.

See: _____

44. Tree Survey (See Chapter 59).

Required for projects that may require removal of trees.

Was a tree survey conducted? Yes _____ No _____
See: _____

45. Mailbox Supports (See Chapters 49 and 58).

Have supports been investigated
and property owners contacted? Yes _____ No _____
See: _____

46. Bicycle Accommodations (See Chapter 17).

Have accommodations been
considered and investigated? Yes_____ No _____
See: _____

47. Other Coordination.

Examples would include, but not be limited to, interested or affected elected officials, organizations (such as local historic preservation groups), and local agencies (such as drainage districts).

See Exhibit(s): _____

CHECKLIST FOR PHASE I REPORTS

Figure 12-3H
(Continued)

12-3.10 Phase I Report Exemptions

There are certain projects that are not complex from an engineering standpoint. Also, they do not cause sufficient impacts to require the preparation of a Phase I report for approval by BDE. Accordingly, a less complex procedure can be used. In this case, the district staff prepares a set of documents designated as the Plans, Specifications, and Estimates (PS&E). In some cases, a Skid-Crash Reduction Analysis may be required. All of these documents are transmitted directly to the BDE Project Development and Implementation Section for processing on a bid letting.

The following project types (and combinations thereof) that are constructed within existing right-of-way will not require Project Reports and, therefore, are intended to expedite processing and design approval:

1. traffic signal modifications and installations of new signals;

2. signing;

3. pavement markings not affecting the number of through traffic lanes;

4. anti-skid treatments and pavement reprofiling;

5. curb and/or gutter repairs and construction of curb ramps for the disabled;

6.* bridge repairs, which do not require traffic detours or runarounds, including:

   a. bridge rail replacement;

   b. bridge deck overlay and waterproofing;

   c. expansion joint replacement;

   d. bearing replacement;

   e. repairs to deck, partial or full depth;

   f. repairs to damaged rails, corroded or damaged structural steel members, and deteriorated areas of concrete elements including sidewalks, curbs, water tables, girders, and portions of the substructure above ground or water;

   g. painting of structural steel; and

   h. individual stringer replacement for a portion of a superstructure;

* *Note: All items under Number 6 require coordination with the Bureau of Bridges and Structures prior to preparation of final plans. Additionally, Item 6a requires TSL plan approval and Item 6e requires approval of a "Bridge Deck Condition Report."*

7. the following lighting and electrical work:

   a. continuous and tower lighting,
   b. tunnel lighting,
   c. temporary lighting,
   d. bridge lighting,
   e. pedestrian lighting,
   f. pumping station,
   g. highway advisory radio,
   h. control systems for changeable lanes,
   i. traffic monitoring systems, and
   j. changeable message signing;

8. landscaping;

9. the following erosion control within existing right-of-way:

   a. slope repair,
   b. ditch and culvert cleaning, and
   c. miscellaneous storm sewer work to eliminate ditch (which does not reduce necessary urban runoff storage/retention);

10. impact attenuator and glare screen installations;

11. the following isolated highway-railroad grade crossing improvements:

   a. repair/rehabilitation of crossing proper,
   b. rehabilitation of immediate roadway approaches to crossing, and
   c. upgrading of crossing protection;

12. the following restoration projects:

   a. retaining wall repair (coordinate with Bureau of Bridges and Structures),
   b. fencing,
   c. guardrail repair,
   d. pavement and shoulder patching/sealing,
   e. intermittent resurfacing, and
   f. repairs to drainage structures not requiring traffic detours or runarounds;

13. installation of turning lanes within an existing median;

14. junkyard screenings;

15. upgrading safety features;

16. approval of utility installations along or across a transportation facility, excluding longitudinal installations within the access control lines of Interstate and freeway rights-of-way;

17. activities included in the highway safety plan developed pursuant to *23 USC 402*;

18. alterations to existing buildings to provide for noise reduction and/or the installation of noise abatement barriers;

19. emergency repairs under *23 USC 125* which do not substantially change the design of the facility and which are commenced during or immediately after the occurrence of a declared national disaster;

20. acquisition of scenic easements;

21. minor improvements to existing rest areas and truck weigh stations which do not require changes to the geometrics or to the number of parking stalls;

22. installation of noise barriers;

23. approval of air space agreements; and

24. disposal of excess right-of-way.

12-4 ESTIMATE OF COST FORMATS

12-4.01 Corridor or Feasibility Studies

These studies are general in nature and are usually comparing alternative corridors or locations. Therefore, the cost estimate is generalized and is made on a per-mile (per-kilometer) basis or by assigning lump-sum dollar amounts to major items.

The format of the cost estimate sheet should only cover major items plus a contingency figure. As a guide in preparing generalized estimates, see Chapter 65 or the latest instructional manual for preparing an Interstate Cost Estimate.

12-4.02 Design Reports, Combined Design Reports, and State Improvement Reports

Figure 12-4A presents the cost items normally used for major projects. See Section 12-1.02 for a description of typical projects in this category. Items may be added or further divided as necessary to properly identify costs on specific projects. Individual cost estimate sheets are usually necessary for each construction segment, which then make up the total cost of each alternative. This segment type format allows the project to be easily programmed for multi-year construction and to provide for usable highway segments. Individual major elements such as interchanges or bridges are listed separately to identify their location and costs. For additional guidance, see Chapter 65.

12-4.03 Project Reports and Other Reports

Figure 12-4B presents a sample cost estimate form with work classification elements considered appropriate for a Project Report or Abbreviated Project Report. This form may be copied and inserted directly into reports or may be modified to fit a specific improvement.

For other reports (e.g., 3P Reports, SMART Reports), the cost estimate is completed on work sheets and the total cost for the project is listed in the report; see Figures 12-3E and 12-3F. For improvements not requiring a Project Report (i.e., Phase I Report Exemptions, see Section 12-3.10), the cost estimate is prepared at the same time as the PS&E package and itemized by pay items.

COST ESTIMATE

Date: _____ Designer: _____

Route: _____ City/County:: _____

Section: _____ Base Year: _____

WORK CLASSIFICATION	Estimated Costs in $1000's					
	Segments					
	1	2	3	4	5	Totals
1. Clear and Grub (Minor removal items and demolition)						
2. Earthwork						
a. Mainline grading and drainage (minor structures).						
b. Frontage road grading and drainage (minor structures).						
3. Pavement						
a. Mainline subbase, base. surface, and shoulder						
b. Frontage road. subbase, base, surface, and shoulder						
4. Grade Separations						
a. Railroads						
b. Highway grade separations, including earthwork and pavement (without ramps). List each separately.						
c. Structure removal						
5. Interchanges (structure, crossroad and ramp earthwork, and crossroad and ramp pavements). List each separately. (Do not include mainline grading or pavement.)						
6. Structures						
a. Drainage (major structures)						
b. Walls (retaining or reinforced earth)						
7. Miscellaneous Items						
a. Guardrail, fencing, and lighting						
b. Traffic control						
c. Traffic signals (modernization or new)						
d. Signing						
e. Railroad Crossing Improvements						
f. Field Office and Laboratory						

COST ESTIMATE FORMAT
(Complex Projects)

Figure 12-4A

WORK CLASSIFICATION	Estimated Costs in $1000's					
	Segments					
	1	2	3	4	5	Totals
8. Other Items						
a. Erosion Control						
b. Landscaping						
c. Rest areas or other amenities						
d. Environmental mitigation						
9. Traffic Management Costs						
a. Crossovers						
b. Temporary roadways						
c. Detours						
10. Subtotal (Categories 1 - 9)						
11. Contingencies (____% of Line 10). (Should not exceed 20%).						
12. Total Construction Cost (Lines 10 and 11)						
13. Right-of-Way						
a. Residential property and relocations						
b. Farm and business property and relocations						
14. Utility Adjustments						
15. *Preliminary Engineering (____% of Line 12).						
16. *Construction Engineering (____% of Line 12)						
17. Total Project Cost (Lines 12 - 16)						
18. Local Participation						

*Note: *If consultant work is anticipated for preliminary engineering or construction engineering, these items should be listed separately in submission of costs for programming purposes.*

COST ESTIMATE FORMAT
(Complex Projects)

Figure 12-4A
(Continued)

COST ESTIMATE

Date: _____ Designer: _____

Route: _____ City/County:: _____

Section: _____ Base Year: _____

WORK CLASSIFICATION	Estimated Costs in $1000's
1. Clearing; Minor Removal Items	
2. Earthwork	
3. Erosion Control	
4. Drainage	
5. Subbase, Base, Surface, Shoulders	
6. Guardrail, Roadside Safety	
7. Traffic Signals (Modernization or New)	
8. Detours, Temporary Traffic Control - Roadway	
9. Railroad Crossing Improvements	
10. Field Office and Laboratory	
11. Environmental Mitigation/Incidental Items	
12. Roadway Subtotal (Categories 1-11)	
13. Structure Removal	
14. Major Culverts	
15. Bridges	
16. Structures for Detours and Temporary Traffic Control	
17. Structure Subtotal (Categories 13 - 16)	
18. Roadway and Structure Subtotal (Lines 12 and 17)	
19. Contingencies (__% of Line 18) (should not exceed 15%)	
20. Total Construction Cost (Lines 18 and 19)	
21. Utility Adjustments	
22. Land Acquisition and Relocations	
23. *Preliminary Engineering (__% of Line 20)	
24. *Construction Engineering (__% of Line 20)	
25. Total Project Cost (Lines 20 - 24)	

*Note: *If consultant work is anticipated for preliminary engineering or construction engineering, these items should be listed separately in submission of costs for programming purposes.*

COST ESTIMATE FORMAT
(Project Reports)

Figure 12-4B

12-5 PROCESSING AND APPROVAL OF PHASE I REPORTS

To ensure uniform designs throughout the State, representatives from BDE and the FHWA, if applicable, attend regularly scheduled district coordination meetings to discuss proposed highway improvements for the annual and multi-year programs. These meetings allow the districts to discuss the proposed design of projects and any alternatives, whether or not public involvement is required, type of report processing, expected environmental issues, and the possibility for design exceptions.

This meeting process allows for considerable discussion during project development and ensures that the proper design is being proposed before a Phase I engineering report is written and completed. This process also helps ensure that reports will cover the appropriate information and that projects are being designed cost-effectively. If projects include accommodation for bicycles, notify BDE's Bicycle Coordinator. For exceptions to geometric design criteria, see Chapter 31.

Because the Department is operating under a Project Oversight Agreement, Department personnel give all design approvals of the engineering aspects of a project, except for the Interstate. See Chapter 31 for discussion of oversight procedures.

For major studies, the Phase I project development networks in Chapters 2 and 3 illustrate the location/design study coordination for environmental studies, public involvement activities, and processing requirements for reports on major studies.

12-5.01 Corridor and Feasibility Study Reports

For Corridor and Feasibility Study Reports, the following will apply:

1. Submittal of Reports. BDE will approve a highway corridor only after the following has occurred:

   - The requirements of Chapter 11 and other applicable laws and regulations (e.g., those related to Chapter 19 and Part III, Environmental Procedures) have been met.

   - The public involvement activities as required by Chapter 19 have been fulfilled.

   - If the National Highway System (NHS) is involved with the corridor, coordination and oversight with the FHWA has been completed. This is usually accomplished at district coordination meetings or at special district meetings. Include the minutes of these meetings in the report.

   - The district has submitted three copies of a Corridor Report or Feasibility Study Report and any separate appendices to the Report.

- One copy of the Public Involvement Document has been submitted, if applicable, which assembles all letters received, comments received, and copies of advertising notices published in newspapers which describe dates and details for informational meetings.

- The district has written a detailed memorandum describing the reasons for selecting the recommended corridor, the items submitted, and requesting corridor approval.

2. Corridor Approval. The Bureau Chief of Design and Environment will grant corridor approval with concurrence of the Director of the Division of Highways. The Secretary of IDOT and the Director of the Office of Planning and Programming should also be contacted on their desire for a briefing meeting before approval is granted.

3. Feasibility Study Approval. For feasibility studies which do not involve a corridor, concurrence of the recommendations will be by the Bureau Chief of Design and Environment.

12-5.02 Design Reports

For Design Reports, the following will apply:

1. Submittal of Reports. BDE will approve a highway on new alignment (e.g., freeway, expressway, bypass) which is documented in a Design Report only after the following has occurred:

   - The corridor has been approved.

   - The applicable requirements of Chapter 11 and other applicable laws and regulations (e.g., those related to Chapter 19 and Part III, Environmental Procedures) have been met.

   - The appropriate number of copies of the FEIS or EA and Appendix A have been submitted by the district as described in Part III, Environmental Procedures.

   - The district has submitted two copies of the Design Report and Appendices including copies of any Technical Reports listed in Section 11-5.04(h).

   - The Bureau of Design and Environment's Bicycle Coordinator has been notified. See Chapter 17 for Bicycle and Pedestrian Accommodation.

   - The public involvement activities as required by Chapter 19 have been fulfilled.

- If the proposed highway is part of the designated National Highway System (NHS), coordination and oversight with the FHWA have been completed. This is usually accomplished by special district meetings with the FHWA. Include the minutes of these meetings in the report.

- Two copies of the Public Involvement Document have been submitted which assembles all letters received, comments received, copies of advertising notices published in newspapers for informational meetings and public hearings, and the disposition of comments.

- Two copies of the Advisory Committee/Working Groups Document have been submitted, if applicable, which provides the description and summary of this process. See Chapter 19 for details.

- BDE and/or FHWA has concurred and approved any design exceptions to the project as discussed in Chapter 31. FHWA must approve Level 1 design exceptions on the Interstate. These are not covered by IDOT's Project Oversight Agreement procedures.

- The district has written a memorandum describing the reasons for selecting the recommended alignment and design features, the items submitted, and requesting design approval.

2. Design Approval. Before design approval on the engineering aspects of a project can be given, FHWA must approve the FEIS (Record of Decision) or EA (FONSI). Once the environmental document is approved, the Bureau Chief of Design and Environment will grant design approval with concurrence of the Director of the Division of Highways. The Secretary of IDOT and the Director of the Office of Planning and Programming should also be contacted on their desire for a briefing meeting before design approval granted. A sample design approval sign-off sheet is shown in Figure 12-5A.

12-5.03 Combined Design Reports

For Combined Design Reports, the following will apply:

1. Submittal of Reports. BDE may approve a proposed improvement where the corridor or location has been predetermined and is documented in a Combined Design Report only after the following has occurred:

    - The applicable requirements of Chapter 11 and other applicable laws and regulations (e.g., those related to Chapter 19 and Part III, Environmental Procedures) have been met.

**FEDERAL AID PRIMARY ROUTE 413
FROM INTERSTATE ROUTE 270 AND INTERSTATE
ROUTE 255 INTERCHANGE IN MADISON COUNTY
TO ILLINOIS ROUTE 267 NORTH OF ALTON, ILLINOIS
IN MADISON COUNTY**

FINAL DESIGN REPORT

Prepared by
the Illinois Department of Transportation

August 1998

The proposed action is the construction of approximately 21 miles (34 km) of four-lane, fully access-controlled, divided highway. The proposed highway extends from the directional interchange of I-270 and I-255 west of Glen Carbon to Illinois Route 267 north of Alton.

This Design Report addresses the no-action alternative and the option of improving existing highways in the study area. Detailed studies for five build alternatives are also presented in this document.

An Environmental Impact Statement has been prepared and approved in conjunction with this Design Report and assesses the potential social, economic, and environmental effects of the various alternatives. The recommended alternative for construction is Alternative C.

Design Approval _____ _____
Bureau of Design & Environment Date

**EXAMPLE OF DESIGN APPROVAL SHEET
(Major Type Project)**

Figure 12-5A

- The appropriate number of copies of the FEIS or EA and Appendix A have been submitted by the district as described in Part III, Environmental Procedures; or if the project qualifies as an ECAD/Categorical Exclusion, the environmental documentation is included in the Combined Design Report.

- The district has submitted two copies of the Combined Design Report and Appendices including copies of any Technical Reports listed in Section 11.5.04(h).

- The public involvement activities as required by Chapter 19 have been fulfilled.

- Two copies of the Public Involvement Document have been submitted which assembles all letters received, comments received, copies of advertising notices published in newspapers for informational meetings and public hearings and the disposition of comments.

- Two copies of the Advisory Committee/Working Groups Document have been submitted, if applicable, which provides the description and summary of this process; see Chapter 19 for details.

- BDE and FHWA have concurred, and BDE has approved, any design exceptions to the project. However, if the project involves the Interstate, FHWA must approve any Level 1 design exceptions.

- The district has written a memorandum describing the reasons for selecting the recommended alignment and design features, the items submitted, and requesting design approval.

2. Design Approval. If an FEIS or EA is required for the project, FHWA must approve the separate environmental document before design approval can be given on the Combined Design Report by BDE. If the project qualifies as an ECAD/Categorical Exclusion type project, design approval is obtained from BDE along with concurrence of the environmental issues as described in the report. FHWA signs the ECAD document which applies to environmental studies and grants Categorical Exclusion concurrence.

   On most projects, design approval will be granted by the Section Chief of the Project Development and Implementation Section, after receiving a recommendation from the Regional Field Engineers in the Section. However, for expressway projects, the Bureau Chief of Design and Environment will grant the design approval. For controversial projects, the Bureau Chief of Design and Environment and the Director of the Division of Highways should be contacted on their desire for a briefing meeting before design approval is granted.

12-5.04 State Improvement Reports

For State Improvement Reports, the following will apply:

1. Submittal of Reports. Projects in this category are similar to those covered in a Combined Design Report (major improvements) except that a decision was made during the programming process not to use Federal funds on the project. BDE approves projects in this category without FHWA involvement after the following has occurred:

   - The public involvement activities as required by Chapter 19 have been fulfilled.
   - Environmental information and documentation have been completed. Use the ECAD record form as a checklist to determine potential project impacts. Include a summary and analysis of impacts as a separate section in the report.
   - The district has submitted two copies of the State Improvement Report and Appendices including copies of any Technical Reports.
   - BDE has concurred in and approved any design exceptions to the project.
   - The district has written a memorandum describing the reasons for selecting the recommended design alternative, the items submitted, and requesting design approval.

2. Design Approval. Design approval will be granted by the Section Chief of the Project Development and Implementation Section, after receiving a recommendation from the Regional Field Engineers in the Section. For controversial projects, the Bureau Chief of Design and Environment and the Director of the Division of Highways should be contacted on their desire for a briefing meeting before design approval will be granted.

12-5.05 Other Type of Reports

12-5.05(a) Submittal of Reports

Projects in this category of improvement are documented by using an Abbreviated Project Report (Figures 12-3B and 12-3C), a Project Report (Figure 12-3A), a 3P Report (Figure 12-3E), or a SMART Report (Figure 12-3F).

For certain types of projects as listed in Section 12-3.10, the preparation of a report to document engineering decisions is not required. These projects, which are exempt from the preparation of a Phase I engineering report, require no right-of-way and are prepared only as a PS&E submittal to BDE.

Depending on the type of project and whether or not a report must be prepared to document engineering decisions, either BDE or the district gives design approval. If the proposed improvement requires approval by BDE, submit two copies of the report to BDE for review and processing. If the district engineer can approve the proposed improvement, submit one copy of the signed report to BDE. Figure 12-5B illustrates the recommended approval form for Project Reports. Figures 12-3E and 12-3F provide the recommended approval forms for 3P and SMART reports, respectively.

Before any reports can be finalized and submitted to BDE, the district and the BDE regional field engineers must determine if any design exceptions on the project are required and, if so, concurrence of the exception must be approved by the Regional Field Engineer through discussions at a district coordination meeting. See Chapter 31 for guidelines on design exceptions.

12-5.05(b) District Engineer Approvals

Approval authority is granted to District Engineers for the following types of projects:

1. 3R Projects. All 3R projects on marked and unmarked State highways may be approved by the District Engineer except for:
   - safety projects,
   - those on Interstate routes and other access controlled highways,
   - those requiring conversions of existing medians or through lanes to two-way, left-turn lanes, and
   - those requiring changes in the number of through travel lanes.
2. New Right-of-Way. For projects requiring 3 acres per mile (0.75 hectares per kilometer) or more of new right-of-way, the District Engineer may approve these projects provided the following have been met:
   - all coordination procedures with resource agencies (e.g., IDNR, IDOA) have been followed;
   - the Environmental Section and resource agency sign-offs have been obtained;
   - all design exceptions have been approved by the BDE Regional Field Engineers; and
   - the necessary geometric design approvals have been issued by BDE.

ILLINOIS DEPARTMENT OF TRANSPORTATION

Key Route: _____ PPS No.: _____
F.A. Route: _____ Marked Route: _____ County: _____
Section: _____ Project Length: _____
Job Number: _____ Contract No.: _____ Program No.: _____
Location: _____
General Description of Existing Facility: _____
Need for Proposed Improvement: _____

Design Policies Used: ☐ New Construction ☐ Reconstruction ☐ 3R ☐ Other _____

General Description of Proposed Improvement: _____

_____

Approximate Amount of ROW to be Purchased:
_____ Parcels Totaling _____ Acres (Hectares).

Number of Businesses: _____ and Residences: _____ to be acquired.

Estimated Program Cost: _____ (in FY _____ Dollars) Fund Type: _____
Construction Cost: _____ Row Cost: _____
Utility Relocation Cost: _____ Consultant P.E. Cost: _____

Is cooperation/participation by local agency in accordance with Department policy? YES NO

Coordination Meetings: Are minutes from district coordination meetings attached? YES NO

Design Exceptions:
- Level One Required? YES NO
- Level Two Required? YES NO
- If yes, note date approved: _____

Type of Public Involvement Activity:
- Public Hearing Offered? YES NO
- Informational Meeting Held? YES NO
- Property Owners Contacted? YES NO

*Categorical Exclusion Certification Statement (Group I):

This project qualifies as a Categorical Exclusion action. It has been determined that the project will not involve any potential for "Unusual Circumstances." Therefore, the project is eligible to be processed as a Group I Categorical Exclusion.

District Design Approval

_____
IDOT District Engineer Date

_____ OR _____

*FHWA Categorical Exclusion
Concurrence (Group II CE Project)

_____
FHWA Representative Date

BDE Design Approval

_____
Bureau of Design & Environment Date
(Regional Field Engineer)

Note: See Section 23-1.05.

PROJECT REPORT APPROVAL FORM

Figure 12-5B

3. Proposed Turn Lanes. For 3R projects, District Engineers may approve the addition of left-turn lanes in existing medians or islands at existing intersections and may also approve the addition of right-turn lanes. However, if the right-of-way requirements cause a change from a Group I to a Group II Categorical Exclusion, the District Engineer must ensure that all necessary coordination has occurred and that all essential approvals have been obtained before granting approval.

4. Intersection Improvements. District Engineers may approve intersection improvement projects provided an intersection design study has been prepared according to the criteria in Chapter 14, the district geometrics engineer has reviewed and approved the intersection design study, and the district geometrics engineer has been certified by BDE. If the district geometrics engineer has not been certified by BDE, submit the intersection design study to BDE for approval. At times, a certified district geometrics engineer may be transferred into a position with responsibilities different than those involved when the certification was obtained. For these cases, BDE must reissue the certification in writing for the new district geometrics engineer. Once the new district geometrics engineer has been certified, the District Engineer may again approve intersection improvement projects and intersection design studies as stated above. All interchange type and design studies will be approved by BDE.

5. Structure Improvement Projects. District Engineers may approve the following non-Interstate projects, with no in-stream impacts, provided the usual approvals, including bridge deck milling and resurfacing, are received from the Bureau of Bridges and Structures and concurrence on the bridge width is received from the Regional Field Engineer:

   a. Stream Crossings. Approval may be granted for stream crossings where the existing waterway opening and design highwater clearance are satisfactory and will be retained, and there will no additional lanes added to the structure. These projects may include bridge deck replacements, bridge superstructure replacements, and bridge widening with no substructure work. The Bureau of Bridges and Structures must provide concurrence of the Bridge Condition Report and hydraulic clearances prior to the District Engineer's approval.

   b. Grade Separations. Approval may be granted for rehabilitation of grade separations where the existing vertical clearances are acceptable and can be maintained and where there will be no additional lanes added to the structure. These projects may include bridge deck replacements, bridge superstructure replacements, and bridge widening with some substructure work to meet current horizontal clearance requirements. The Bureau of Bridges and Structures must provide concurrence of the Bridge Condition Report prior to the District Engineer's approval.

6. 3P and SMART Projects. District Engineers will typically approve these projects. Discuss these projects at the district coordination meetings to determine if there is a potential for unusual circumstances or if any design exceptions are required.

The District Engineer may only re-delegate authority to signoff on projects to the district Program Development Engineer. To ensure the approval authority outlined above for District Engineers is being exercised uniformly on a Statewide basis and to provide consistency in project development procedures, process reviews may be conducted by BDE on a random basis. This will allow the Department to maintain the integrity of its Project Oversight Agreement with FHWA.

12-5.05(c) Bureau of Design and Environment Approvals

For any type of proposed improvement not eligible for District Engineer approval, the report (e.g., Abbreviated Project Report, Project Report, 3P Report, SMART Report) is submitted to BDE and approved by the Regional Field Engineer in the Project Development and Implementation Section.

12-5.06 Reports for Routes with Combined Jurisdictions

Where BDE and the Bureau of Local Roads and Streets (BLR&S) have joint jurisdiction of a facility, the following sections will apply.

12-5.06(a) State Highway System

For Federal-aid projects, use the Department's Project Oversight or Exempt Procedures; see Chapter 31. It will not be necessary to submit Project Reports to FHWA for design approval or concurrence except for projects on the Interstate system. However, FHWA still has oversight responsibilities on all Federal-aid projects that have any potential for significant environmental impacts and/or involvement with multilane access-controlled facilities on the National Highway System (NHS). In addition, all Group II Categorical Exclusion projects with potential for "unusual circumstances" must be discussed with FHWA at district coordination meetings. In addition, consider the following:

1. No Jurisdictional Transfer. The following applies to all State routes, marked or unmarked:

    a. Reports. Discuss all projects at district coordination meetings before finalizing and submitting any reports. Reports prepared by the district or their consultant should be submitted to BDE for review, approval, or information. Reports prepared by the local agency or their consultant should be submitted to BLR&S for review, approval, or information. When the need for a design exception is discovered at the local coordination meeting on routes under State Jurisdiction, BLR&S will coordinate and discuss this information with BDE prior to approval action.

b. NHS Facilities. If a local agency is preparing the report for a State highway on the NHS, BDE will review the highway geometrics and cross-section design during the development of preliminary alternatives stage. Once the geometrics and cross-section designs are agreed to, BLR&S will review the report and process it accordingly.

2. Jurisdictional Transfer to a Local Agency. The following will apply:

a. Federal Funds. Regardless of which agency initiates a project, submit the Project Report to BLR&S for review and approval. When the State is providing matching funds, BLR&S will coordinate the design requirements with BDE prior to approval.

b. State-Only Funds. The preparation of a Project Report will usually be required. Submit the report to BDE for review and approval, as required, when reports are prepared by the district or their consultant, or to BLR&S if a local agency or their consultant prepared the report. The local agency should coordinate the proposed design with the district BLR&S before submitting the report to the Central Office.

c. District Coordination Meetings. For jurisdictional transfers using either Federal funds or State-only funds, it is imperative that these projects be discussed at the district coordination meetings. This will allow BDE and BLR&S to become aware of proposed design features and costs and to determine if the project is still the same as originally discussed during programming meetings.

d. Agreements. Ensure all joint projects conform to the Department's participation policies for joint agreements; see Chapter 5.

e. Review of Agreements. After joint agreements are finalized by district staff and submitted to BLR&S, BLR&S will forward agreements to BDE for their review and concurrence. In addition to the normal review by the BDE Preliminary Engineering Section, the Regional Field Engineers will also review the agreement for proper design content.

12-5.06(b) Local Highway System

The following will apply to projects on the local highway system (e.g., county highways, township roads, municipal streets):

1. Federal Funds. Submit the Project Report to BLR&S for review, coordination, and approval. When the State highway system is involved (e.g., an intersection with a State highway), the district geometrics engineer will review the design to the extent appropriate and obtain any approvals of exceptions to geometric policy from BDE.

Concurrence with the intersection design should be accomplished prior to submittal of the report to BLR&S for approval.

2. Other Funds. No report will be necessary. Environmental coordination and design exceptions should be processed through BLR&S. The district geometrics engineer may be requested to review the intersection design studies. The district BLR&S will approve the construction plans.

12-5.06(c) Combined Systems

For projects that have substantial work on both highway systems, use the following procedures:

1. State-Only Funds. For projects being developed with State-only funds, process the Project Reports through BDE when Central Office design approval is required.

2. Federal Funds. For projects using Federal funds and where the district or their consultants prepare reports, process the Project Report through BDE. BDE will coordinate any design requirements with BLR&S. Where local agencies and their consultants prepare reports, process the Project Report through BLR&S. BLR&S will coordinate any design requirements with BDE.

12-5.06(d) Modified Procedures

Where special or unusual situations arise during project development, modified review and processing procedures may be necessary. In these cases, the district, BLR&S, and BDE should agree on the modified procedures to use.

12-5.07 Project Reports for the Highway Safety Program

The Hazard Elimination (HE) Program is intended to make moderate cost improvements, addressing specific site-related crashes, and eliminating over-represented crash patterns. These projects will typically require an Abbreviated Project Report or may be exempt from the preparation of a report; see Section 12-3.10.

In many cases, the improvements may be short-term until such time as major reconstruction can be undertaken. Any additional work not directly related to the specific crash problem is not eligible for HE funding, unless it can be justified as being appropriate or necessary due to its relationship with the basic crash history.

In addition to the guidelines in Section 12-3.07, Project Reports for safety improvements will include the District Engineer's concurrence of the project in the Highway Safety Program. Project Reports should include the following information:

- project priority numbers for the annual District Highway Safety Program;
- project locations showing county, route, and limits of construction;
- descriptions of work as determined by the District Highway Safety Program Team;
- estimated costs and benefit/cost ratios; and
- district Highway Safety Team member titles, their bureaus, and signatures together with the District Engineer's concurrence.

Document the selection of a project for the Safety Program on the Program Sheet, see Figure 12-5C, and include it with the Project Report with the PS&E submittal.

When any significant revisions to the scope of work, estimated cost, or benefit/cost ratio are proposed for the annual District Highway Safety Program, the Safety Team members and the District Engineer must sign and submit a Safety Program Revision sheet. Also, include this sheet in the Project Report or with the PS&E submittal. Figure 12-5D illustrates the suggested format for a HE Program Revision Sheet. This information is required for BDE project monitoring activities and provides for Statewide Safety Program and Project Criteria Monitoring, which is a requisite to design approval.

Design approval procedures and the preparation of a Project Report for safety projects are not waived by Departmental Policy TRA-15 and approval procedures and the preparation of a Project Report for safety projects; approval procedures will continue to be in accordance with Section 12-5.05 or Section 12-3.10.

ILLINOIS DEPARTMENT OF TRANSPORTATION

DISTRICT HIGHWAY SAFETY PROGRAM SHEET

District 10 Fiscal Year (FY) 96 FY Allocation $900,000

PRIORITY NUMBER	COUNTY, ROUTE, TERMINI	SCOPE OF WORK	ESTIMATED COST & B/C RATIO
1	Sauk Co., U.S. 12, North Street to Freedom Street in Baraboo	High-Friction Resurfacing & Traffic Signal Modernization, 0.3 mi (0.48 km)	$222,000 B/C = 2.8
2, 3, etc.	---	---	---

TOTAL COST OF FY SAFETY IMPROVEMENTS _____

_____ _____
District Traffic Safety Team Member Date

_____ _____
District Maintenance Safety Team Member Date

_____ _____
District Planning Safety Team Member Date

_____ _____
District Design Safety Team Member Date

Approved: _____ _____
District Engineer Date

EXAMPLE HE PROGRAM SHEET

Figure 12-5C

ILLINOIS DEPARTMENT OF TRANSPORTATION

DISTRICT HIGHWAY SAFETY PROGRAM
REVISION * SHEET

District 10 Fiscal Year (FY) 96

PRIORITY NUMBER	COUNTY, ROUTE, TERMINI	SCOPE OF WORK	ESTIMATED COST & B/C RATIO
1	Sauk Co., U.S. 12, North Street to *Lake Street in Baraboo	High-Friction Resurfacing & Traffic Signal Modernization, * 0.3 mi (0.48 km)	$275,000 * B/C = 2.3

	District Traffic Safety Team Member	Date
	District Maintenance Safety Team Member	Date
	District Planning Safety Team Member	Date
	District Design Safety Team Member	Date
Approved:	District Engineer	Date

EXAMPLE HE PROGRAM REVISION SHEET

Figure 12-5D

12-6 CORRIDOR PROTECTION

12-6.01 Need

Section 4-510 of the *Illinois Highway Code* (605 ILCS 5/4-510) provides a means of protecting the right-of-way of "future additions" to State highways from future developments. This statute would apply to either new construction on new location or to additions or widening of the existing highway system under the reconstruction category.

Prior to initiating a corridor preservation project, the proposed improvement must be analyzed to determine the potential for development on future right-of-way needs. A proposed highway located in or near a rapidly developing urban area might require corridor protection soon after design approval is received, whereas a proposed highway in a rural area might have little likelihood of immediate development.

12-6.02 Procedures

The Land Acquisition *Policies and Procedures Manual* describes the procedures and exhibits needed to file a Corridor Protection Map.

12-7 ROUTE LOCATION DECISIONS

12-7.01 Purpose

A Route Location Decision is a legal declaration made by the Illinois Department of Transportation, establishing the location of a proposed State highway or revising the location of an existing State route, as required by Chapter 605 ILCS 5/4-204 of the *Illinois Highway Code*.

12-7.02 Applicability

Prepare a Route Location Decision where the following occurs on a State highway:

1. a route will be developed on a new location;

2. there is a change in the termini of an existing route;

3. a portion of an existing route will be relocated for a length of 1 mile (1.6 km) or more;

4. a portion of an existing route will be relocated a lateral distance of 0.5 miles (0.80 km) or more from the former location;

5. a loop or spur will be added to an existing route;

6. an existing route will be relocated due to the expansion of airport facilities; and/or

7. in conjunction with an Order Establishing a Freeway, the freeway or expressway will be developed on a new location. Where a portion of an existing route will be declared a freeway, a Route Location Decision is not required.

12-7.03 Content

The Route Location Decision consists of a detailed legal description referenced to section corners, townships, ranges, and a map upon which the selected route location is shown.

Approximate scale values may be used in the description where field survey data is not available. A county map having a scale 1 in = 1 mile (1:60,000 metric) typically is used to show the route location.

A sample Route Location Decision is shown in Figure 12-7A.

12-7.04 Preparation and Processing

Subsequent to the review of comments received at a public hearing or informational meeting and the disposition of comments, and after design approval of the location is given by BDE, prepare a Route Location Decision and forward it, in duplicate, to BDE. The Preliminary Engineering Section will review the location decision for form and content and will process it for execution.

12-7.05 Execution

Upon execution of the Route Location Decision by the appropriate Department officials, an original copy of the document is returned to the district for recording in the Office of the County Clerk of each county in which the highway is located. Once the recording is complete, the Route Location Decision is returned to BDE for filing.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE LOCATION DECISION

Along Federal-aid Route 155 from Henry Street in Alton, one block east of the Clark Bridge, in a generally southeasterly direction to a point near the intersection with FA Route 4 near Wood River in Madison County.

WHEREAS, the Department of Transportation of the State of Illinois has proceeded to select, lay out, and survey a part of Federal-aid Route 155 along a line as shown on the map attached hereto and made a part hereof, and on a location more particularly described as follows:

Commencing from a stone set at the northwest corner of Front Street and Henry Street, as said streets are now laid out on the plats of the City of Alton, thence South 84 degrees 19 minutes East along an easterly prolongation of the north line of Front Street for a distance of 99.00 feet (30.175 meters) to a point in the east line of Henry Street; thence South 6 degrees 12 minutes West along the east line of Henry Street for a distance of 864.60 feet (263.530 meters) to a point, said point being the POINT OF BEGINNING; thence South 80 degrees 48 minutes East along the centerline of FA Route 155 for a distance of 585.73 feet (178.531 meters) to a point of curve, ...

(*continuation of detailed legal description referenced to section corners, townships, and ranges*)

... for a distance of 266.82 feet (81.327 meters) to an intersection with the centerline of FA Route 4 (Business U.S. 67); said point of intersection being the END OF ROUTE LOCATION DECISION; and being approximately 1000 feet (305 meters) South 68 degrees 17 minutes West from the east Line of NW 1/4 of Section 28, T5N, R9W of Third Principal Meridian, Madison County.

WHEREAS, the location of Federal-aid Route 155 within the above limits having been fully examined and observed and the width of right-of-way needed for developing and improving said route having been considered and determined; and

WHEREAS, it is required that a detailed description of the location of that part of Federal-aid Route 155 described above, and the width of right-of-way needed for development and improvement be entered of record in the Department of Transportation of the State of Illinois;

IT IS THEREFORE ORDERED, that that part of Federal-aid Route 155 extending from a point on Henry Street in Alton, one block east of the Clark Bridge, in a generally southeasterly direction to a point near the intersection with FA Route 4 near Wood River in Madison County be and is hereby located as described herein, and that the said location as described be and is hereby selected as the location of part of Federal-aid Route 155 and also, that there shall be acquired for this part of Federal-aid Route 155 a general right-of-way width of 200 feet (60.960 meters), except that such additional widths may be acquired as may be required for backslopes in cuts, downslopes in fills, frontage roads to serve built-up areas, and additional areas as may be required at intersecting streets or highways for providing traffic flow, safe-sight distances, and control of access to Federal-aid Route 155.

SAMPLE ROUTE LOCATION DECISION

Figure 12-7A

IT IS FURTHER ORDERED that this map and order be filed as a part of the records of the Department of Transportation of the State of Illinois.

ENTERED THIS _____ day of _____ 20____.

_____
Secretary of Transportation

SAMPLE ROUTE LOCATION DECISION

Figure 12-7A
(Continued)

12-8 ORDER ESTABLISHING A FREEWAY

12-8.01 Freeways and Expressways

1. New Locations. According to Chapter 605 ILCS 5/8-101 of the *Illinois Highway Code*, once it has been decided to control access on a State route, it is necessary to designate and establish the facility as an access-controlled highway. This action is initiated after design approval is obtained for the freeway/expressway. The Order Establishing a Freeway (Order) is a legal declaration made by the Department designating a highway as an access-controlled facility and delineating the extent of the freeway/expressway.

2. Revisions to Existing Orders. This situation is identical to "new locations" except that an existing Freeway Order is revised to describe a change in the originally approved access control limits; see Section 37-1.03 and Chapter 35.

12-8.02 Procedures

The Order must include the access limits along the mainline and the specific limits on all crossroads kept open to traffic. The Order contains a legal description of the freeway/expressway referenced to section corners, townships, and ranges. The Order is approved and signed by the Illinois Secretary of Transportation. An original copy of the fully executed Order is returned to the district for recording in the Office of the County Clerk of each county in which the freeway/expressway is located. Once the recording is completed, the Order is returned to BDE for filing. Figure 12-8A illustrates a sample Order.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

ORDER ESTABLISHING A FREEWAY

Along Federal-aid Route 155 from Henry Street in Alton, one block east of the Clark Bridge, in a generally southeasterly direction to a point near the intersection with FA Route 4 near Wood River in Madison County.

The Department of Transportation of the State of Illinois acting under authority conferred on it by "An Act authorizing the Department of Transportation, the County Board of any County, or the corporate authorities of any City, Village, or Incorporated Town to designate and establish existing and proposed highways under their respective jurisdiction and control as freeways, and to limit access thereto" designated as Chapter 605 ILCS 5/8-101, as amended, and the Department being of the opinion that the safety and convenience of highway traffic will be promoted and the public interest subserved thereby, does hereby designate and establish a FREEWAY along the general location of those portions of Federal-aid Route 155 described below, and does declare its intention of proceeding to improvement and develop said portions of Federal-aid Route 155 in a manner which will permit access between said FREEWAY and abutting lands only at entrances provided for that purpose, in accordance with the provisions of said Act:

Commencing from a stone set at the northwest corner of Front Street and Henry Street, as said streets are now laid out on the plats of the City of Alton, thence South 84 degrees 19 minutes East along an easterly prolongation of the north line of Front Street for a distance of 99.00 feet (30.175 meters) to a point in the east line of Henry Street; thence South 6 degrees 12 minutes West along the east line of Henry Street for a distance of 864.60 feet (263.530 meters) to a point, said point being the POINT OF BEGINNING; thence South 80 degrees 48 minutes East along the centerline of FA Route 155 for a distance of 585.73 feet (178.531 meters) to a point of curve, thence along a curve to the right, having a radius of 2864.79 feet (873.188 meters), for a distance of 1879.17 feet (572.771 meters) to a point of tangency; thence South 43 degrees 13 minutes East for a distance of 589.97 feet (179.823 meters) to a point of curve; thence along a curve to the left, having a radius of 3819.72 feet (1164.251 meters), for a distance of 1433.33 feet (436.879 meters) to a point of tangency; thence South 64 degrees 43 minutes East for a distance of 259.62 feet (79.132 meters) to a point of curve; thence along a curve to the right, having a radius of 5729.58 feet (1746.376 meters), for a distance of 2206.67 feet (672.593 meters) to a point of tangency; thence South 42 degrees 39 minutes East for a distance of 1241.69 feet (378.467 meters) to a point of curve; thence along a curve to the left, having a radius of 2864.79 feet (873.188 meters), for a distance of 970.00 feet (295.656 meters) to a point of tangency; thence South 62 degrees 3 minutes East for a distance of 2529.42 feet (770.967 meters) to a point on the westerly edge of east-half of Fractional Section 19, T5N, R9W, 3rd PM; said point being South 0 degrees 51 minutes East a distance of 498.40 feet (151.912 meters) from the center of said Section 19, thence South 62 degrees 3 minutes East for a distance of 791.51 feet (241.252 meters) to a point of curve; thence along a curve to the right, having a radius of 3819.72 feet (1164.251 meters), for a distance of 1631.11 feet (497.162 meters) to a point of tangency; thence South 37 degrees 35 minutes East for a distance of 319.90 feet (97.506 meters) to a point of curve; thence along a curve to the left, having a radius of 2864.79 feet (873.188 meters), for a distance of 1718.34 feet (523.750 meters), to a point of tangency; thence South 71 degrees 57 minutes East for a distance of 1111.06 feet (338.651 meters) to a point of curve; thence along a curve to the right, having a radius of 7473.04 feet (2277.783 meters), (for a distance of 1021.69 feet (311.411 meters) to a point of tangency; thence

SAMPLE ORDER ESTABLISHING A FREEWAY/EXPRESSWAY

Figure 12-8A

South 64 degrees 7 minutes East for a distance of 1256.64 feet (383.024 meters) to a point of curve; thence along a curve to the left, having a radius of 3819.72 feet (1164.251 meters), for a distance of 3173.33 feet (967.231 meters) to a point of tangency, thence North 68 degrees 17 minutes East for a distance of 266.82 feet (81.327 meters) to an intersection with the centerline of FA Route 4 (Business U.S. 67); thence continuing North 68 degrees 17 minutes East along the centerline of SBI Route 3, being also the centerline of Ferguson Avenue, for a distance of 598.70 feet (182.483 meters) to a point, said point being approximately 40 feet (122 meters) South 68 degrees 17 minutes West from the east line of the NW 1/4 of Section 28, T5N, R9W of the Third Principal Meridan, Madison County, and the END OF THIS FREEWAY ORDER.

Notice is hereby given that, in accordance with the provisions of the Act referred to above, no owner of or persons having an interest in land abutting those portions of Federal-aid Route 155 hereby designated and established as a FREEWAY shall lay out, provide, or construct any new means or enlarge or extend any existing means of ingress to or egress from said abutting land from or to such FREEWAY except upon written consent of the Department of Transportation.

Notice is further given that, in accordance with the provisions of the Act referred to above, no new highway, road, street, alley, or other public way shall be opened into or connected with or be carried over or under those portions of Federal-aid Route 155 hereby designated and established as a FREEWAY except upon written consent of the Department of Transportation.

By Order of
The Department of Transportation

Secretary of Transportation Date

SAMPLE ORDER ESTABLISHING A FREEWAY/EXPRESSWAY

Figure 12-8A
(Continued)

Chapter Thirteen

WORK ZONE TRAFFIC MANAGEMENT STUDIES

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

Chapter Thirteen
WORK ZONE TRAFFIC MANAGEMENT STUDIES

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CHAPTER THIRTEEN
WORK ZONE TRAFFIC MANAGEMENT STUDIES

Chapter 13 discusses the goals and objectives of a Traffic Management Analysis and the content for a Traffic Management Analysis Report. Chapter 55, the *Standard Specifications for Road and Bridge Construction*, and the *Highway Standards* provide the design criteria to be used when designing a traffic control plan.

13-1 GENERAL

13-1.01 Purpose

The maintenance of traffic flow during reconstruction, rehabilitation, or resurfacing of a State highway will involve traffic and worker safety, public relations with motorists, and capital costs to the Department. A well-planned method for maintaining traffic flow can minimize complaints from the traveling public and from residents and businesses along the affected route. It can also help to eliminate unnecessary capital costs to the Department. Evaluate each construction site on its own merits as to the appropriate method for maintaining traffic. Each Phase I Report should contain a Traffic Management Analysis (TMA) indicating an overall strategy for accommodating traffic during construction. The TMA should address the preferred traffic control method, alternative traffic control applications, geometric design criteria, the impact traffic will have on other facilities, local concerns, cost effectiveness of various alternatives, etc. For projects not requiring a Phase I Report (e.g., SMART, 3P, traffic signals) and for projects where the application of the *Highway Standards* will address the detailed traffic management, a TMA will not be required.

13-1.02 Traffic Control Plans (TCP)

The major differences between a TMA and a TCP is that the TCP focuses on the maintenance and protection of traffic within the construction zone; the TMA addresses project-related impacts throughout the project corridor and sometimes beyond. The TMA will include a preferred traffic control method. In general, the designer will be responsible for incorporating the TMA objectives into the TCP. Chapter 55 and Part VII discuss IDOT criteria for TCP's. If a TMA was not developed during Phase I, the designer must ensure that a reasonable transportation management strategy has been incorporated into the traffic control plans. Note that changes made during the preparation of the TCP may affect the overall TMA. For example, a lane closure that precipitates large queues on a freeway may cause traffic to divert to a nearby urban arterial. This may require signal coordination, lane widening, turn restrictions, etc., on the arterial to improve its capacity.

13-1.03 Application

For many projects, the TMA not only must address the alternatives confined to the project site, but it must also evaluate the impact traffic will have on the entire corridor. Conduct an evaluation of the entire corridor on projects that have one or more of the following characteristics:

- where the project scope of work consists of major reconstruction or new construction;
- where there are high traffic volumes;
- where there may be significant detrimental impacts on mobility for either through or local trips in the corridor;
- where the facility's capacity will be significantly reduced (e.g., lane, ramp, or interchange closures);
- where alternative routing will be necessary (e.g., detour routing for hazardous materials, wide loads);
- where there will be significant impacts on local communities and businesses (e.g., emergency vehicles, school buses, postal service);
- where timing (e.g., special events) and seasonal impacts may be significant;
- where there will be significant grade changes; and/or
- where no alternative routes are available.

Where a series of proposed projects are along the same corridor or along corridors of close proximity, consider combining the projects into a single TMA. If circumstances prohibit a single TMA, ensure that the individual TMA's are coordinated.

13-1.04 TMA Development

13-1.04(a) Procedure

The following discusses the procedures for the development of a TMA:

1. Approval. In general, the TMA will be approved as part of the Phase I Report. Where there is a road closure with a marked detour, forward the TMA to BDE for review and approval from the Detour Committee prior to submitting the Phase I Report. For an unmarked State highway road closure or for a road proposed to remain open by either stage construction or a runaround, the appropriate BDE field engineer will approve the

TMA. For a closed unmarked State highway, also coordinate with the local county officials prior to submittal of the Phase I Report.

2. TMA Team Selection. For large projects, a TMA team may be organized during Phase I to study the traffic control alternatives and their effect on the corridor. Section 13-1.04(b) provides guidance on the makeup and responsibilities of the TMA team.

3. Phase I Report. The district will incorporate the TMA recommendations into the Phase I Report. Section 13-5 discusses the contents of a TMA Report. If improvements are required to other facilities (e.g., widening of detour routes), it is important to implement these improvements as soon as practical prior to construction of the mainline facility. Allow local agencies sufficient opportunity to complete their improvements before construction on the State route begins. Agreements or concurrence may be necessary between the State and local agencies to determine cost sharing arrangements and/or approval of a local road as a detour route.

4. Hearings. No formal public involvement activity (e.g., public hearing) should occur until BDE approves the recommended alternative in the TMA Report. However, informal public involvement will be necessary during the analysis of alternatives.

5. Design. During Phase II, it will be the designer's responsibility to implement the recommendations from the approved TMA into the detailed Traffic Control Plan (TCP), which is included in the construction plans and special provisions. The designer may be required to collect additional data and conduct additional analyses. When available, consult the TMA team when design and TCP decisions dictate a revision to the proposed TMA.

6. Construction. The TMA will be implemented during construction. Any significant proposed changes to the TMA by construction or the contractor should be reviewed with the TMA team prior to implementation. For larger projects, a public relations campaign may be required to begin prior to construction. If for any reason an approved marked detour route must be altered, it must be coordinated with the Detour Committee for approval of the new detour route.

13-1.04(b) TMA Team

If it has been determined that a TMA team is required for the project, the district will initially recommend the TMA team representatives. This determination will be based on the purpose, goals, and constraints of the TMA. A well-balanced TMA team is an important ingredient for a successful project. The variety of disciplines represented presents an effective liaison group to meet the various needs of a TMA. Depending on the project logistics, the team composition will vary from project to project. The TMA team may include representatives from:

- district Design;
- district Operations;
- district Construction;
- district Local Roads and Streets;
- Central Office Bureau of Construction;
- BDE;
- Maintenance Operations Section;
- Traffic Operations Section;
- Bureau of Local Roads and Streets;
- Office of Planning and Programming;
- Office of Public Affairs;
- Division of Public Transportation;
- FHWA;
- local government (county and/or city);
- major employers and other private companies; and
- others as deemed necessary (e.g., State Police, hospitals).

The anticipated traffic impacts will dictate the extent and nature of the TMA team's responsibilities. These may include all or part of the following functions:

- collecting data (e.g., traffic counts, crash history, roadway geometrics, proposed developments, operating speeds);
- conducting analyses (e.g., capacity analyses, traffic impact studies, safety studies, queuing analysis, geometric adequacy);
- reviewing design alternatives;
- reviewing traffic control alternatives;
- reviewing the adequacy of alternative routes (e.g., geometrics, capacity, safety, structural, roadway widths);
- reviewing on-site and off-site traffic operational improvements (e.g., signal improvements, parking restrictions, radius improvements);
- reviewing construction phasing and scheduling alternatives;
- determining the cost of various options and improvements;
- determining which options are the most cost effective;
- coordinating with local officials and businesses;

- researching local traffic demand for effects of seasonal and special events;
- coordinating funding and timing with other projects within the corridor;
- coordinating the design with other TMA plans in the region;
- planning for emergency responses (incident management);
- planning rideshare and transit strategies;
- providing recommendations for the Phase I report;
- reviewing design and TMA changes made by the designer to ensure they meet the TMA objectives;
- reviewing proposed changes made by the contractor or resident engineer during construction; and
- where necessary, developing a final report on the successes and problems of the TMA.

13-2 TRAFFIC CONTROL MANAGEMENT

13-2.01 Terminology

The following definitions are used to define the time length for work zones:

1. Long-Term Stationary Work Zone. A construction, maintenance, or utility work site that requires traffic control in the same location and where the activity requires longer than three days.

2. Intermediate-Term Stationary Work Zone. A construction, maintenance, or utility work site that requires traffic control in the same location and occupies a location from overnight to three days.

3. Short-Term Stationary Work Zone. A construction, maintenance, or utility work site that requires traffic control in the same location and where the activity takes from one to twelve hours.

4. Short-Duration Work Zone. A construction, maintenance, or utility work site that occupies a location up to one hour.

5. Mobile Work Zone. A construction, maintenance, or utility work site that is continuously moving during the period when work is actively in progress.

13-2.02 Work Zone Type

There are several basic work zone types that may be considered in a TMA. Except for roadway shifts, work sites which are completely off the roadway and do not disrupt traffic are not addressed because they will generally not have a major effect on traffic. The main function of these work types is to "relocate traffic flow" so that the construction work can proceed with minimum interruption and hazard to the workers and to the motorists. The most common projects where relocating traffic flow may be a factor include:

- bridge reconstruction, rehabilitation, or replacement;
- major pavement rehabilitation of existing highways;
- pavement removal and replacement;
- horizontal alignment change; and
- vertical alignment change.

The following presents a description for several work zone applications:

1. Lane Constriction. This work zone type is configured by reducing the width of one or more lanes to retain the number of lanes normally available to traffic. An example of lane constriction is shown in Figure 13-2A. This application is the least disruptive of all

work zone types, but it is generally only appropriate if the work area is mostly outside the normal traffic lanes. Note that narrow lane widths may reduce the facility's capacity, especially where there is significant truck traffic. The use of shoulders as part of the lane width helps reduce the amount of lane width reduction that may be required; however, check the structural adequacy of the shoulders. Where this application is applied to long-term work zones, it will require the removal of the current lane markings to avoid motorist confusion. Chapter 55 discusses the minimum lane widths that must be provided.

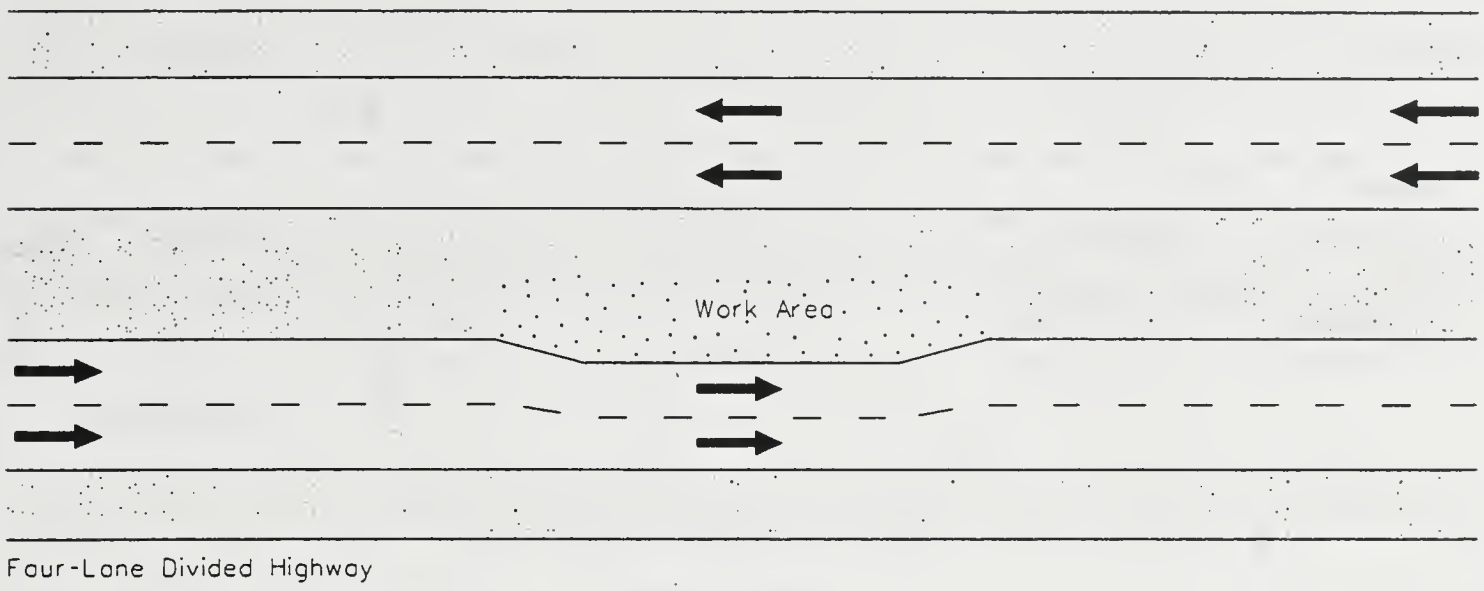
2. Lane Closure. This work zone type closes off one or more normal traffic lanes. A lane closure example is shown in Figure 13-2B. Capacity and delay analyses may be required to determine whether serious congestion will result from lane closures. In some cases, use of the shoulder or median area as a temporary lane will help mitigate the problems arising from the loss in capacity. Upgrading or replacement of existing pavement or shoulder, or placement of temporary pavement may be necessary.

3. One-Lane, Two-Way Operation. This work zone type involves utilizing one lane for both directions of traffic. Figure 13-2C illustrates a one-lane, two-way operation work zone. This work zone type is typically only used on bridges or small, short-term projects. Flaggers or traffic signals are normally used to coordinate the two directions of traffic.

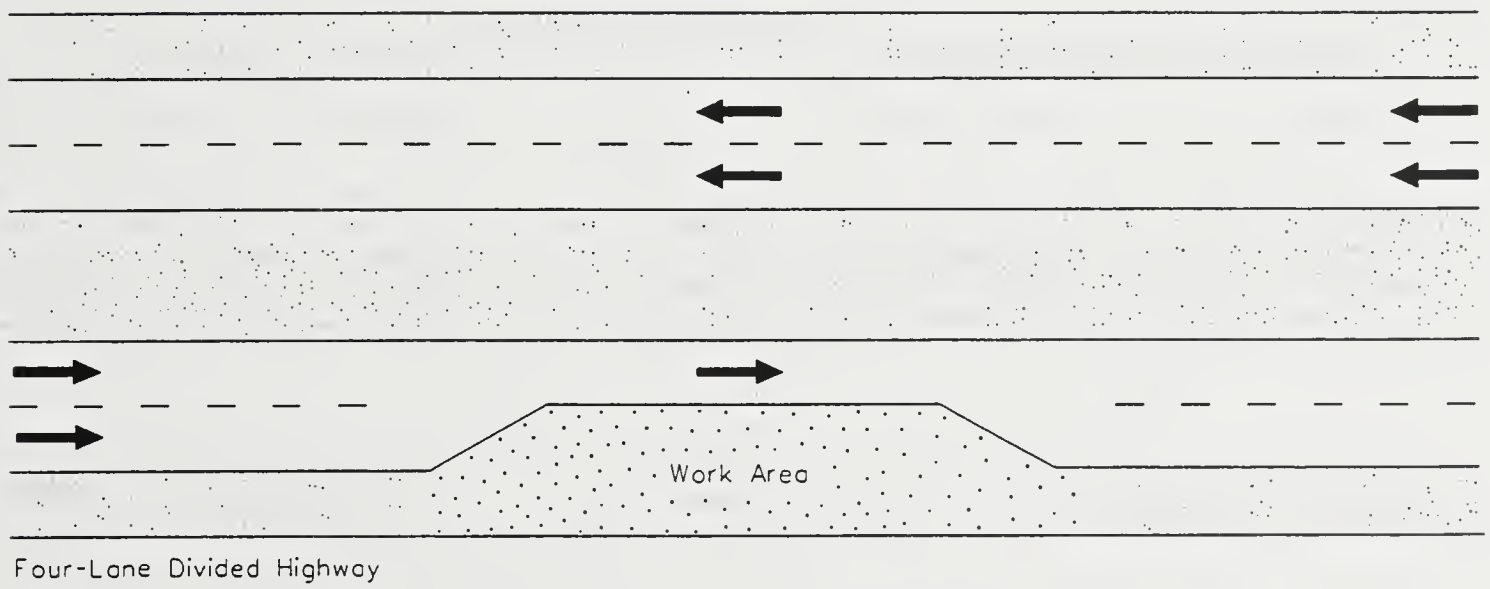
4. Runaround. This work zone involves the total closure of the roadway (one or both directions) where work is being performed and the traffic is rerouted to a temporary roadway constructed within the highway right-of-way. A runaround example is shown in Figure 13-2D. This application may require the acquisition of a temporary easement and usually requires extensive preparation of the temporary roadway. Generally, temporary runarounds are designed for a posted speed reduction of no more than 5 mph to 15 mph below the existing posted speed of the route. Chapter 55 discusses the minimum geometric design criteria for runarounds.

5. Intermittent Closure. This work zone type involves stopping all traffic in one or both directions for a relatively short period to allow the work to proceed. This application is illustrated in Figure 13-2E. After a specific time, depending on traffic volumes, the roadway is re-opened and all vehicles can travel through the area. This application is normally only appropriate on low-volume roadways or during periods where there are very low volumes (e.g., Sunday morning, nighttime).

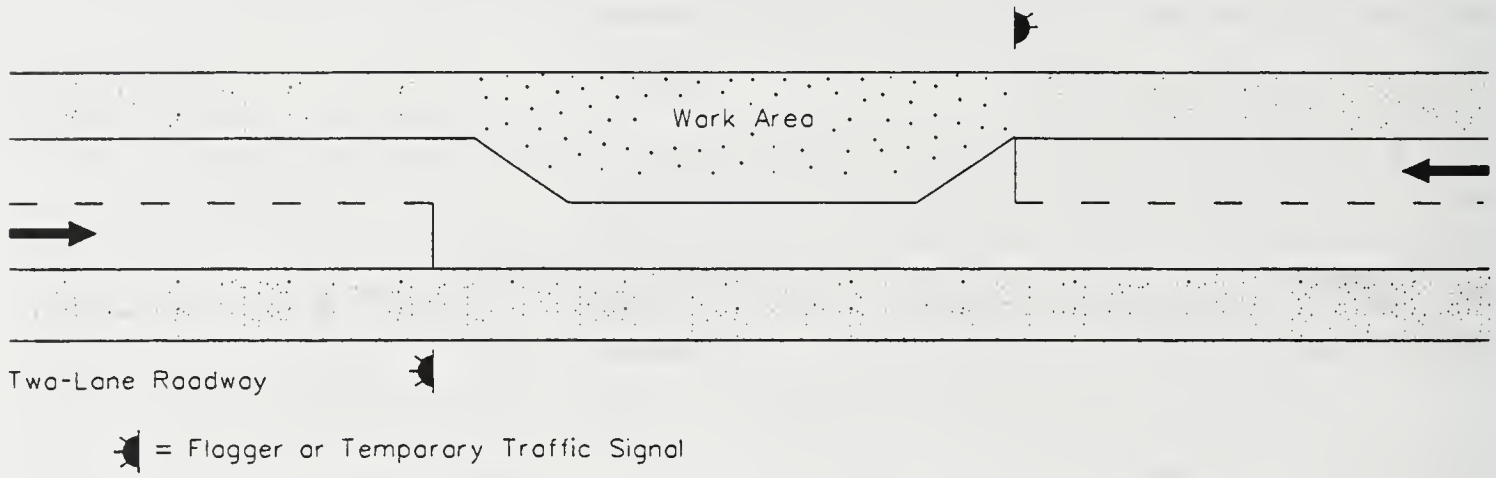
6. Use of Shoulder or Median. This work zone type involves using the shoulder or the median as a temporary traffic lane. Figure 13-2F illustrates an example of using the shoulder and median. To use this technique for more than a short period, it will be necessary to evaluate the shoulder and subgrade to see if it is adequate to support the anticipated traffic loads. This technique may be used in combination with other work zone types or as a separate technique.



LANE CONSTRICTION WORK ZONE
Figure 13-2A

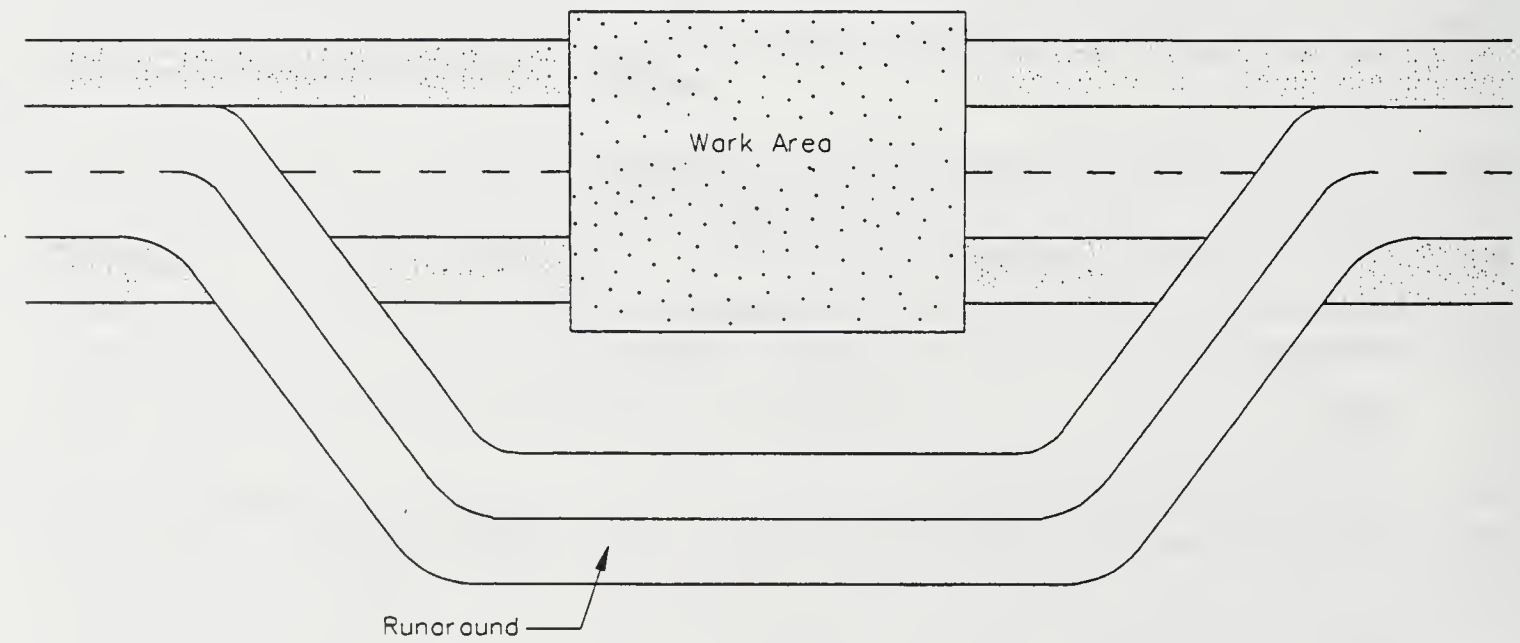


LANE CLOSURE WORK ZONE
Figure 13-2B



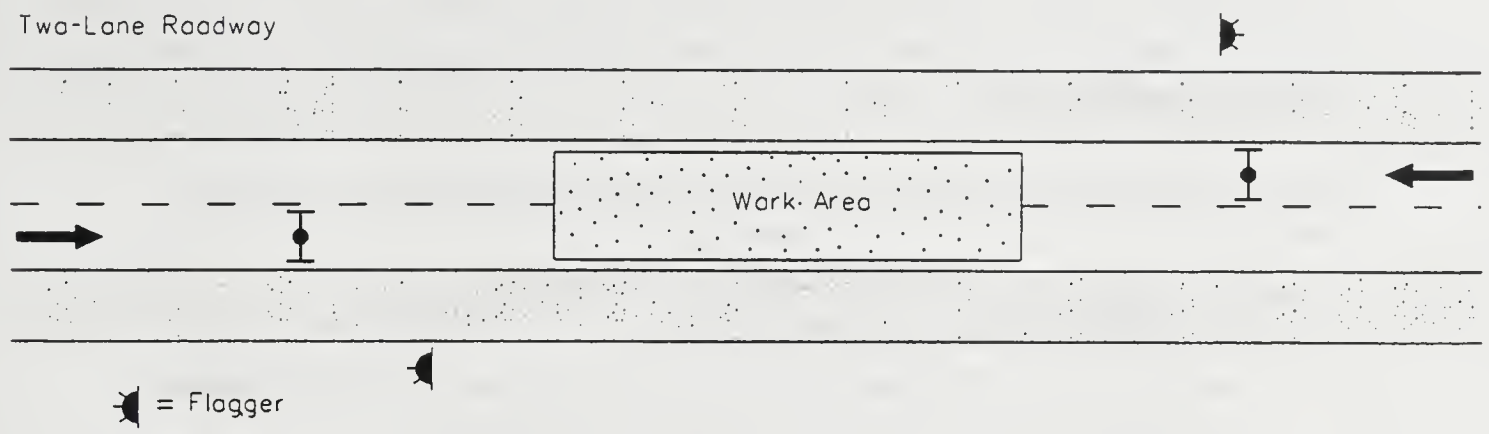
ONE-LANE, TWO-WAY OPERATION WORK ZONE

Figure 13-2C



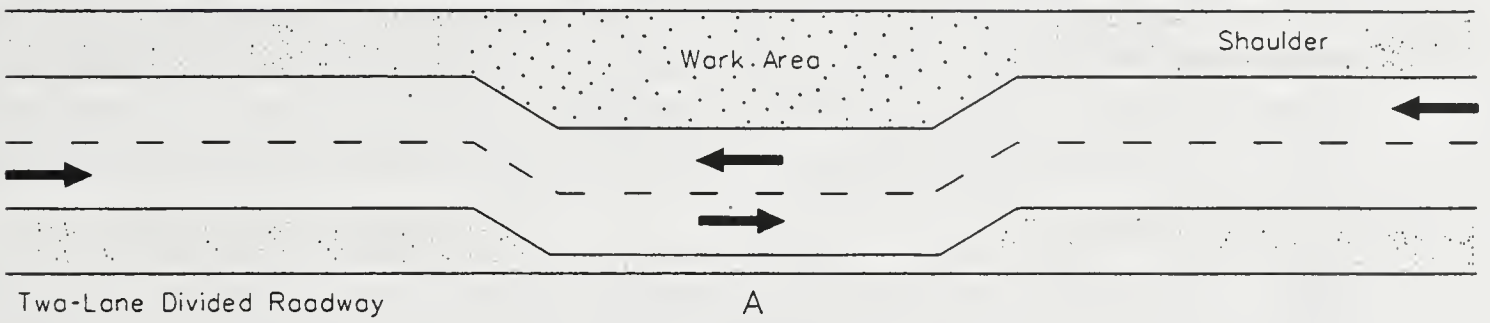
RUNAROUND WORK ZONES

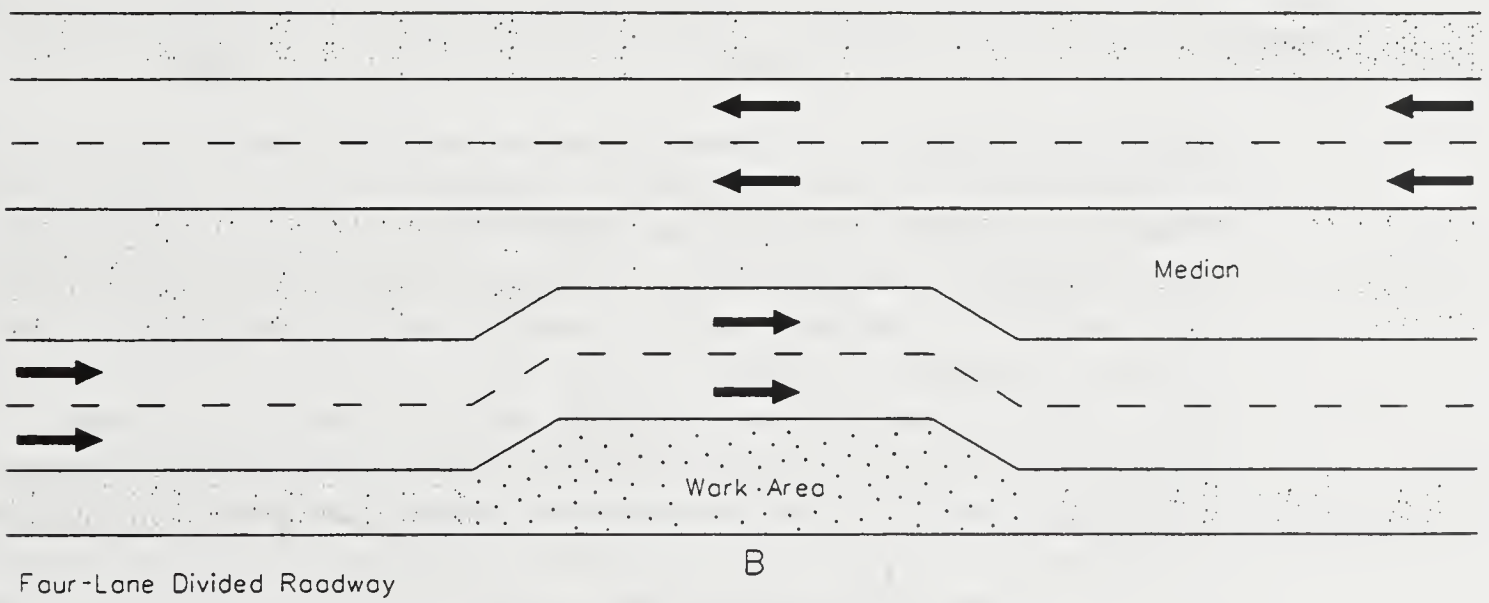
Figure 13-2D



INTERMITTENT CLOSURE

Figure 13-2E





SHOULDER OR MEDIAN USE WORK ZONES

Figure 13-2F

7. Two-Way Traffic on Median Divided Facility with Crossover. This work zone type involves routing one direction of the traffic stream across the median to the opposite traffic lanes. This application might also incorporate the use of shoulders and/or lane constrictions to maintain the same number of lanes. Figure 13-2G illustrates examples of crossovers. Due to the inherent high traffic volumes and, in most cases, higher speeds, it will be necessary to consider higher geometric criteria due to the higher motorist expectations.

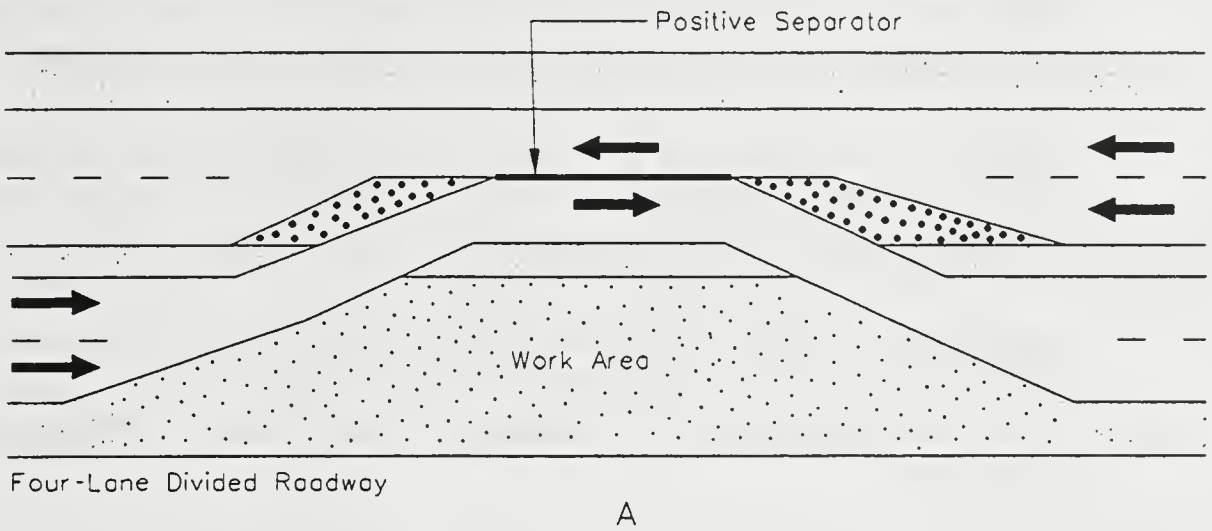
   The use of this application is encouraged under the following conditions:

   - all safety issues can reasonably be addressed,
   - construction time can be reduced,
   - pavement and shoulder structures can be reasonably upgraded, and
   - roadway geometrics allow crossover construction.

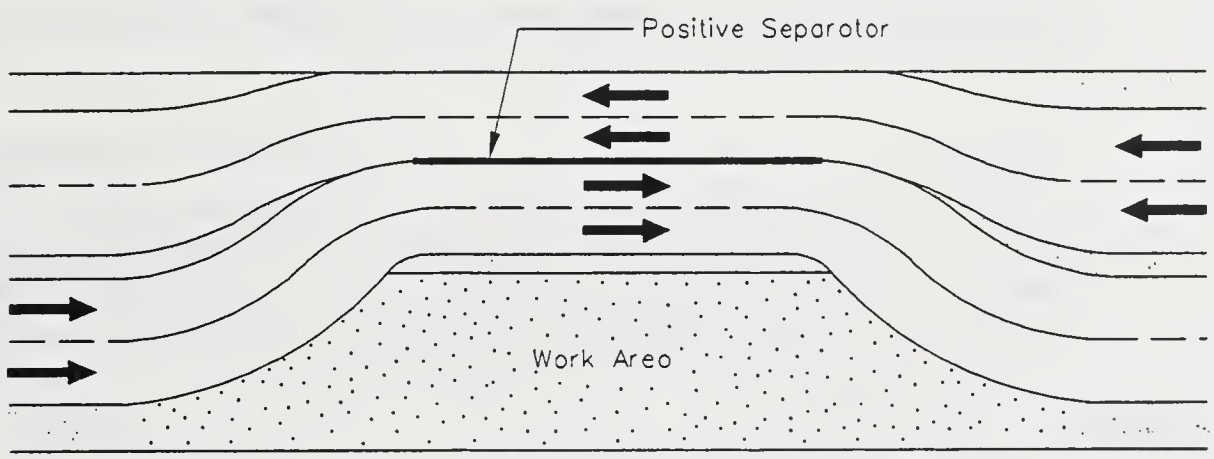
   Chapter 55 and the *Highway Standards* discuss the design issues relative to designing two-way applications and crossovers (e.g., maximum length, pavement widths, pavement design, speed reductions). If this application is used, separate opposing traffic on high-speed facilities (i.e., posted speeds of 45 mph or greater) with positive barriers throughout the length of the two-way operation. Drums, cones, or vertical panels may be substituted for positive barriers in low-speed urban situations. The *Highway Standards* also depict the channelization devices that may be used with this layout. Consider also the option of reconstructing the shoulder to allow it to be used as a travel lane.

8. Detour. This work zone type involves total closure of the roadway, one or both directions, when work is being performed and rerouting the traffic to existing alternative facilities. This application is particularly desirable when there is unused capacity on roads running parallel to the closed roadway. When considering detours, evaluate the following:

   a. Local Route Detours. Local route detours are generally used in conjunction with the rehabilitation or reconstruction of two-lane, two-way State-maintained highways having an ADT less than 5000 vpd. However, a local route (e.g., county highway, township road, municipal street) may require upgrading (structurally and/or geometrically) or extraordinary maintenance to carry the anticipated temporary increase in traffic and to restore it subsequent to the detour. When investigating the practical use of a local road as a detour route, note that the detour route only will be temporarily serving the through traffic. If the local route detour will be an economically reasonable alternative, make every effort to use the existing roadway width, the existing right-of-way, and to minimize any contemplated utility adjustments. Also, investigate the local route to determine the safe detour speed. Where the posted speed of the detour route is



A



B

CROSSOVER WORK ZONES

Figure 13-2G

less than that of the detoured route, additional speed signs and warning devices may be required. Contact officials having jurisdiction over the local route and obtain their concurrence prior to using the route for a temporary detour.

b. Marked State Routes. For marked State routes with ADT's greater than 5000 vpd, locate the detour along other marked State routes. Note that the adverse effects listed below and those for local detour routes also may apply to these detour routes.

c. Location. The beginning and end of all detours should coincide as near as possible with the beginning and end of the construction project. Where practical, avoid long detours that will bypass entire communities.

d. Pedestrians. Evaluate pedestrian traffic concerns and methods of eliminating or minimizing any other adverse effects when closing a road. Adverse effects could include inadequate access to buildings, private property, or businesses along the closed road.

e. Railroad Crossings. Examine railroad crossings to see if existing protective devices, sight distances, geometrics, and crossing surfaces are adequate for the proposed traffic.

f. Wide Load Restrictions. Determine if there will be a need to post advance signs to prohibit wide loads from utilizing the detour.

g. Split Detours. In some cases, it may be advantageous to provide two detours routes — a marked State route detour and a local route detour. Through traffic and heavy-truck traffic is detoured onto State-marked, high-type surface highways. The local route detour is for local traffic and vehicles weighing less than 25,000 pounds (11,000 kg). This limit will allow school buses to use the local route detour.

h. Benefits. Note that improvements to local routes provide a permanent benefit for the public, whereas runarounds provide only temporary benefits that cease when the construction project is completed.

9. Roadway Shifts. This work zone type shifts the proposed roadway alignment laterally, (e.g., 50 ft (15 m), 100 ft (30 m)) so that the existing roadway or bridge can be used as the means to maintain traffic flow at the work site. This is an option that is usually only appropriate at horizontal curve locations, or bridge sites where the roadway profile gradeline must be raised for hydraulic purposes. Note that additional right-of-way or easements will often be necessary for this work zone type.

10. Work During Non-Peak Hours. When high-volume projects do not have good alternatives for 3R type work, consider requiring work during non-peak hours and/or night work.

13-2.03 Work Zone Traffic Control Strategies

13-2.03(a) Objectives

The desired objectives to consider in relocating traffic flow are:

- Remove traffic from the work site. This option usually reduces the Department construction costs. With this option, sufficient space should be available for the contractor to perform the work with reasonable economy and safety.

- Avoid unreasonable adverse travel and public inconvenience.

- Ensure that only reasonable delays will be caused for emergency vehicles, school buses, mail carriers, etc.

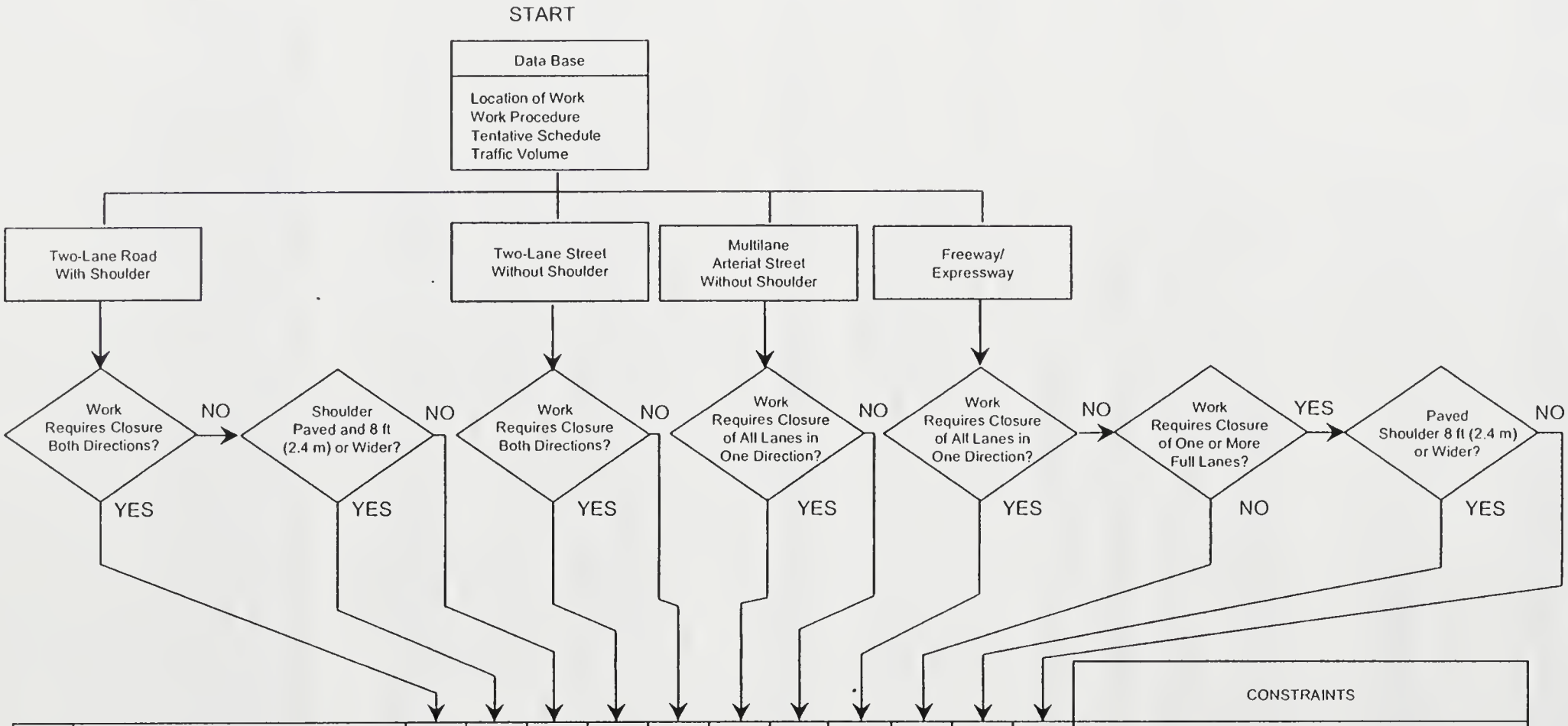
- Maintain reasonable access for local interests (residents, businesses, agriculture, etc.).

- Maintain marked route continuity to avoid motorist confusion and to enhance safe travel.

13-2.03(b) Selection

Selection of the appropriate work zone type represents one of the most significant elements of a control strategy. Other elements of a control strategy that should be considered include length of the work zone, time of work, number of lanes, width of lanes, traffic speeds, and right-of-way. Considering these and other factors, reasonable alternatives can be narrowed to a selected few for further review. Typically, only a small number of reasonable work zone alternatives will emerge for a particular project and, in many cases, only one may be practical. Identification of these alternatives at an early stage in the planning process can reduce significantly the necessary analysis effort.

Figure 13-2H provides guidelines for identifying practical work zone alternatives based on roadway type, lane closure requirements, shoulder width, traffic volume, and the availability of right-of-way and detour routes. However, every work zone location will have a wide variation of conditions and an all-inclusive selection matrix is not practical. Other issues to consider include the following:



ALTERNATIVE WORK ZONE TYPES													CONSTRAINTS
	LANE CONSTRICTION (Use part of the shoulder if necessary)		√	√						√			Restripe lane lanes; keep lanes 10 ft (3.0 m) or wider.
	LANE CLOSURE							√		√	√	√	Will the reduced number of lanes have adequate capacity?.
	DETOUR TO EXISTING ROAD	√		√	√	√	√	√	√		√	√	Reasonable detour route(s) available. Maintain local access.
	CROSSOVER						√		√				Can adequate crossover geometrics be provided?
	ALTERNATING ONE-WAY OPERATION		√	√		√							Traffic volume less than 1000 vehicles per hour both directions.
	INTERMITTANT TOTAL CLOSURE	√			√				√				Traffic volumes less than 500 vehicles per lane per hour.
	RUNAROUND	√		√					√				Sufficient right-of-way available.
	USE OF SHOULDER (As a full lane)		√								√		Check the structural adequacy of the shoulder.

√ *Practical Alternatives*

IDENTIFICATION OF FEASIBLE WORK ZONE TYPES

Figure 13-2H

1. Local Regulations. Many jurisdictions have adopted safety regulations and public convenience policies as safeguards against the unacceptable impacts of work zones. These regulations and policies may impose additional constraints regarding the types of control strategies that can be implemented. Knowing these constraints can help eliminate impractical alternatives from consideration. The public convenience policies or local regulations may specify peak-hour restrictions, access requirements, noise level limitations, material storage and handling, excavation procedures, work zone lengths, and number of traffic lanes that must remain open.

2. Multilane Facilities. Traffic on multilane facilities is usually maintained through the use of lane constrictions, lane closures, or median crossovers. Maintaining traffic flow on multilane facilities generally will require higher criteria than those used on the rural two-lane highway system because of the higher speeds and traffic volumes. See the *Highway Standards* and Chapter 55 for recommended design guidelines.

3. Bridges. Traffic maintenance for bridges may consist of crossovers, stage construction (partial closure), detours, runarounds, or split detours. Coordinate all proposed designs with the Bureau of Bridges and Structures to determine their feasibility. In addition, consider the following:

   a. Crossovers (Full Closure). Consider using crossovers with bridge and superstructure replacements and deck replacements on multilane median divided facilities.

   b. Stage Construction (Partial Closure). Stage construction for bridges will generally consist of lane constrictions, lane closures, or one-lane, one-way operations. However, stage construction may increase unit costs, increase the difficulty of reconstructing the bridge, have inherent hazards due to close proximity of traffic to the construction operations, and generally involves a restricted lateral clearance for vehicles, wide loads, and farm equipment. With lateral restrictions, it is important that these restrictions be adequately marked in advance of the work site. Consider the following factors when determining the feasibility of stage construction for bridges:

      - type, length, and width of present and new structure;
      - beam spacing and location in relation to the desirable staging limits;
      - lane and shoulder widths required during stage operations; this may require using the shoulder as part of the lane;
      - the use of temporary traffic signals; and
      - cost attributable to staging.

Deck repairs can usually be staged for all structure types. Superstructure and deck replacement, however, is sensitive to the type of structure involved. Existing multi-beam superstructures (e.g., steel I-beams, concrete I-beams) and culverts can usually be adapted to construction staging techniques. Other types of structures (e.g., pony trusses, relatively short-span structures utilizing low trusses without cross bracing) may be staged, but with greater difficulty and expense. Some structures (e.g., through trusses, through girders) cannot practically be staged.

c. Runarounds. At locations where a through truss, pony truss, or steel through girder is being replaced, consider moving the truss or girder laterally to temporary abutments and using the structure as a part of the runaround.

d. Split Detours. If significant through traffic is using the road, it may be advantageous to provide a marked detour route around the work site and build a low-water runaround across a stream for local access. This option is usually applicable only on low-volume unmarked rural highways with less than 400 vehicles per day. See the *Bureau of Local Roads and Streets Manual* for design considerations and Section 404 permit requirements.

4. Additional Guidance. For additional guidance in analyzing and preparing a scheme to maintain traffic flow at work sites, see the *Highway Standards*, *Illinois Manual on Uniform Traffic Control Devices*, *Standard Specifications*, and Departmental Policy TRA-1 "Traffic Control Through Construction and Maintenance Areas."

13-3 TRAFFIC MANAGEMENT ANALYSIS STRATEGIES

In addition to the traffic control strategies discussed in Section 13-2, the following sections provide brief summaries of the various Traffic Management Analysis (TMA) strategies that may be considered during the development of a TMA. These strategies must be reviewed and adjusted to meet each project location and situation. Note that the strategies discussed in these sections are not all inclusive and that other options may be applicable for the location under consideration.

13-3.01 Construction Phases

How a project is constructed can greatly impact the traffic flow through the work area. The following sections discuss some of the basic construction phases for freeways.

13-3.01(a) Reconstruction by Halves (Sides)

This approach involves the reconstruction of all lanes in one direction while the opposing lanes share the same roadway with traffic in the other direction. This basic concept is the two-way traffic on a divided facility discussed in Section 13-2.02. For high volume four-lane facilities, both shoulders may be rebuilt to provide four reduced-width lanes. For six-lane facilities, traffic is generally restricted to two lanes in each direction. This may require using the shoulders, reducing the lane widths, and/or providing minor widening. Under certain circumstances, depending on the median width and shoulder configuration, the inner lane of the two-way operation may not be readily accessible in the event of emergencies. Providing for emergency turnouts and/or emergency vehicle access at appropriate intervals on the segment under construction may be considered. Some advantages and disadvantages of this strategy include:

Advantages

- It provides an effective work area.
- Generally, workers are well separated from the traffic stream.
- Work site access can be arranged with minimal interference from the general traffic flow.

Disadvantages

- Crossovers are typically required.
- Positive separation of the traffic streams is required.
- There are potential emergency access problems throughout the project.
- There may be special problems at interchanges with traffic crossing the work zone.
- Reduced capacity.

13-3.01(b) Parallel/Adjacent Reconstruction

This approach usually involves a variety of lane constriction and lane closure sequences discussed in Section 13-2.02. A typical sequence of this approach is as follows:

1. Phase A. First, the existing shoulders are widened and strengthened if necessary.

2. Phase B. Traffic is shifted to the shoulders to allow construction of the inner lanes and any median reconstruction.

3. Phase C. Traffic is then shifted to the newly constructed inner lanes to allow reconstruction of the outer lanes.

4. Completion. After construction is completed, traffic is returned to the original travel lanes.

A key advantage of this strategy is that traffic is not required to cross over the median and does not operate in a two-way operation. Some of the disadvantages include:

- Typically, it provides a more constrained work area for the contractor.
- Work crews are generally closer to moving traffic.
- Access to the construction zone typically involves entry and exit from the travel lanes.

For six-lane facilities, the facility is generally reduced to two-lanes in each direction and the above sequence is used. When closing the middle lane, it is preferable to keep the two through lanes on the same side of the construction zone (e.g., by using the shoulder) versus splitting the two lanes on either side of the construction zone.

13-3.01(c) Serial/Segmental Reconstruction

This strategy consists of permitting only short segments of the facility to be under construction at one time. This also requires one or more of the other concepts for traffic accommodation. An example of this application may include a shallow culvert replacement where each half can be constructed, backfilled, and opened to traffic within a 12-hour time period.

The advantages of this approach include relatively short work zones and few, if any, interchanges are impacted at any one time. One of the more serious disadvantages of this strategy is that the overall time period that the facility is under construction may be lengthened considerably because the construction for each segment will proceed independently. Therefore, the exposure to the potentially hazardous conditions of a work zone for both the traveling public and the work force may be substantially greater than could be the case with one of the other strategies.

13-3.01(d) Complete Closure (Detour)

In some circumstances, complete closure of the facility or closure of one direction of travel and detouring the traffic onto an alternative route may be an effective strategy. This strategy may also be effective for only certain hours of the day (e.g., 8 p.m. to 6 a.m. on weekdays and from 8 p.m. to 8 a.m. on weekends). Section 13-2.02 discusses other issues relative to detours. Some of the advantages and disadvantages of this strategy include:

Advantages

- Increases the safety for construction workers.
- Generally provides cost and time savings.
- Reduces the overall travel impacts to the public due to reduced construction time.

Disadvantages

- Potentially significant short-term travel impacts to the public.
- Potential increase in traffic congestion on other routes.
- May need to construct a detour/runaround.
- Potential adverse impact on businesses due to trip suppression (not enough traffic).
- Potential adverse impact to businesses on alternative routes (too much traffic).

13-3.01(e) Combinations

Often, a combination of construction sequences is the best strategy. For example, reconstructing existing shoulders prior to initiating parallel construction activities. The following sequence of construction could be utilized:

1. Phase A. Reconstruct shoulders as appropriate to allow one side of the roadway to accommodate four lanes.

2. Phase B. Shift traffic to the four available lanes on one side of the roadway.

3. Phase C. Shift traffic to the newly constructed side of the roadway using the additional reconstructed shoulder lane.

Other combination-type construction sequences involve the reconstruction of interchanges where both sequential and parallel activities may occur simultaneously.

13-3.02 On-Site Strategies

13-3.02(a) Traffic Control Devices

Consider the application of the following traffic control devices when developing a TMA:

1. Changeable Message Signs. These devices may be used where static sign messages are not sufficient to accommodate the changing conditions of a work zone (e.g., lane closures, ramp closures, to advise motorists of conditions for which they will need to possibly react).

2. Additional Informational Panel Signs. These signs may be used to give the motorists additional information about a work zone. Ensure the message on these signs is pertinent to the likely conditions the motorist will encounter.

3. Signal Interconnect. Interconnect traffic signals where the benefit of moving traffic through a work zone more efficiently will be enhanced by adding interconnection between the traffic signals on the system.

4. Signal Timing. Revise the timing of traffic signals within a work zone to increase the capacity. Adding or deleting of signal phases may be required for changes in travel patterns.

5. Highway Advisory Radio. Use highway advisory radio where changing work zone conditions make it important to give the motorist a longer, more accurate message than could be obtained through the use of signs or other means. This option requires additional information and signing to alert motorists.

6. Temporary Work Zone Speed Limits. A reduced regulatory speed limit may be warranted where work activity may constitute a hazard to traffic or workers. Direction on alteration of work zone speed limits is provided in the current policy "Work Zone Speed Limit Signing." See the Bureau of Operations for additional guidance.

7. Arrow Boards. In construction areas, arrow boards are used to supplement conventional traffic control devices. They typically are warranted where additional warning and directional information is required to assist in merging and controlling traffic through and around the work activity. The *Highway Standards* provides additional guidance on the placement and use of arrow boards in construction zones.

13-3.02(b) Capacity

Each construction site will affect the capacity of the existing facility. The extent the roadway is occupied for work and safety purposes will determine the number of strategies required to

compensate for the loss of capacity. Consider the following capacity strategies when developing a TMA:

1. Temporary Parking Restrictions. One option to increase capacity is to restrict on-street parking that can then be used to add an additional lane or to reduce traffic conflicts. These restrictions can be during peak periods or for 24 hours/day. However, ensure that the concerns of on-street parking for local businesses have been addressed. Use of parking lanes for traffic lanes also may require geometric revisions at intersections.

2. Restriction of Trucks. Restriction of trucks may increase the facility's capacity. However, consider local and/or State ordinances and the availability and suitability of alternative routes that the restricted trucks will be required to take.

3. Turn Restrictions. Eliminate or restrict turns at intersections and/or driveways to increase capacity and/or safety reasons. Turn restrictions can be during peak periods or for 24 hours/day.

4. Reversible or Contra-Flow Lanes. Use reversible or contra-flow lanes where there is a strong peaking traffic distribution. The use of these lanes may be limited in use due to the cost of providing and maintaining the daily switchovers. There also may be safety considerations which will require evaluation if reversible lanes are contemplated.

5. Ramp Metering. Consider using or revising ramp metering where it is necessary to control the volume of traffic entering a freeway for capacity and safety reasons. Ramp metering may be used during peak periods or for 24 hours/day. Also consider the impact ramp metering will have on the intersecting street (e.g., traffic backup).

13-3.02(c) Miscellaneous Strategies

In addition to the above sections, consider the following miscellaneous on-site strategies when developing a TMA:

1. Ramp Closures. The following will apply to ramp closures:

   a. Short/Intermediate Term. Short- or intermediate-term ramp closures may be necessary for construction purposes. If closures are required, additional signage will be necessary to forewarn the motorist. It is recommended to post signs on the affected ramp two weeks in advance to advise motorists of the closure date(s) and/or periods of the day the ramp will be closed.

   b. Long Term. Long-term ramp closures may be necessary to construct or to improve traffic flow on the mainline road. Consider the effect the ramp closure will have on emergency services, local access, and businesses before deciding on a long-term ramp closure. Also evaluate the user costs for a detour route and

the capacity and safety impact of the detour route. Do not close two adjacent ramps at the same time unless necessary for safety reasons.

2. Incident Management. Consider the use of on-site tow trucks for freeway work zones with limited or no shoulders available. They should also be considered where a crash or break-down will seriously impact the roadway and cause significant backups and delays. Consider providing turnarounds for access through temporary concrete barrier and for tow trucks and State police to park.

3. Special Materials. Examine the use of high early strength concrete, precast items or other special materials where traffic restrictions must be minimized (e.g., ramps, intersections, high-volume roadways).

4. Police Patrols for Speed Control. Police patrols in work zones may be required to ensure vehicular speeds are at or below the posted speed or for other safety reasons. This typically will require coordination with BDE and the Bureau of Operations.

5. Incentives/Disincentives. Consider adding incentive/disincentive provisions to minimize the time a facility may be affected by construction. The contractor is provided additional funds if the project is completed early or is assessed damages if the project is not completed on time. Section 66-2.04 discusses when incentive/disincentive provisions should be considered.

6. Pedestrians. In urban or suburban areas where pedestrian activity is likely, pedestrian access must also be provided during construction. This may require providing temporary sidewalks, protection from drop offs, adjustment to traffic signals, etc. See Chapter 58 for ADA accessibility requirements that may also be applicable to construction zones.

13-3.03 Off-Site Strategies

Where construction will significantly impact the traffic flow away from the work zone, consider the following off-site strategies in the TMA:

1. Advance Informational Panel Signs. These signs may be used to give the motorists additional information about a work zone that is ahead or on a different route. Provide these signs where it is advantageous to give this information to a large number of motorists or where it is necessary to inform motorists of an alternative route to avoid a congested work zone.

2. Changeable Message Signs. These devices can be used to give the motorists information required to prepare them for upcoming changing conditions or information about how to avoid a condition. Consider these devices where static messages are generally not appropriate.

3. Signal Interconnect. Evaluate interconnecting traffic signals where moving traffic through an alternative route corridor more efficiently is enhanced by adding interconnection between traffic signals on the alternative route system.

4. Signal Timing. Evaluate traffic signal timing changes and/or additional phases for traffic signals on an alternative route because of the added traffic expected to use the route.

5. Capacity Improvements. Additional improvements on the alternative route may be necessary for capacity reasons to accommodate the expected diversion of traffic. Examples of capacity improvements include additional pavement width, adding turn lanes, removal of parking, turn restrictions, and truck restrictions.

6. Trailblazing to Attractions and Points of Interest. Trailblazing may be necessary to guide motorists to attractions and points of interest in those circumstances where the normal route is closed or seriously restricted, or where an alternative route to the attraction or points of interest will assist traffic through the work zone.

13-3.04 Scheduling

Project scheduling can greatly affect the overall success of the TMA. For example, restrictive scheduling may be required to facilitate the opening of a highway prior to a special event. When determining a construction schedule, consider the following:

1. Construction Time. See Section 66-2.03 for guidance on estimating the expected construction time for the project. Also, consider the following:

   a. Short Schedule. A schedule to minimize construction activities and disruption to traffic may be required if motorist user costs are expected to be excessive. However, short schedules may increase the cost of the project.

   b. Longer Schedule. A longer schedule of construction activities may be cost effective if it does not significantly increase the adverse impact to motorists. The contractor may offer to provide a lower price for a longer schedule.

2. Time of Day/Day of Week Restrictions. These types of restrictions may be necessary if the work zone capacity will not accommodate the expected demand during the peak periods and other measures are not as cost effective. For example, night work may be required to allow longer work hours than can be provided between morning and afternoon peaks and to decrease the excessive traffic delays or congestion associated with lane closures during the daytime.

3. Project Phasing. Project phasing or completing smaller portions of a construction project one portion at a time may be necessary to limit disruption to traffic. However, construction activity in the same area over several seasons should be discouraged.

4. Combining with Other Work. Projects within a corridor may be combined or scheduled at the same time where practical, pending available funding, to minimize impacts to the motoring public.

5. Timing. Control the timing of road closures for a certain time of the year by either setting the letting date or by placing restrictions in the special provisions. Also, when closing or restricting widths on rural highways, time the closure to occur after spring planting operations have been completed and ensure that the highway is open to traffic by harvest time.

13-3.05 Public Relations/Information

For a TMA to be successful, it often requires public involvement and the revision of traveling habits. The following discusses how the public can become informed and involved in the TMA:

1. Public Relations Campaign. It is important that the public be informed initially and remains informed in a timely manner to ensure that the TMA will work. Coordinate all proposals for major construction/reconstruction projects with the Office of Public Affairs. Also, prior to implementing any detour routes or road closures, the Office of Public Affairs must be given a one-week notice. Consider the following elements of a public relations campaign where significant impacts to traffic are expected:

   - information to news media,
   - television advertisements,
   - radio advertisements,
   - IDOT internet website,
   - town meetings and informal hearings,
   - surveys and brochures to be passed out to motorists at key locations,
   - information given to motorists at rest areas and welcome centers, and/or
   - contacting local businesses with large numbers of affected employees or customers.

2. Car and Van Pooling. Consider car and van pooling campaigns where it can be expected to reduce the number of vehicles through a work zone and where a successful campaign can be expected.

13-4 COST-EFFECTIVE ANALYSES

13-4.01 General

Failure to maintain traffic flow adjacent to the highway under construction can cause driver aggravation, adds substantial operating costs to motorists or businesses on an individual basis, and could cause unfavorable public relations for the Department. However, these considerations must be balanced against the capital costs to the Department, because limited available funds often are needed for improving other highways and bridges. Capital costs include the building and removal of a temporary runaround, using a local route detour and structurally upgrading its roadway, paying for accelerated construction progress, or providing stage construction that may result in increased unit costs. These options can add considerable costs to the overall project.

For many projects, there may be more than one option that will address the problem of traffic during construction. To determine the most appropriate option, the designer or TMA team must compare the benefits and costs of each to determine the most appropriate option. Some projects may not have alternative methods of maintaining traffic. In these cases, the user cost calculations will generally not be required. However, for projects with incentive/disincentive clauses, the user costs must still be determined.

13-4.02 Cost Evaluations

13-4.02(a) On-Site

When determining the cost for on-site options (e.g., runarounds, lane closures, crossovers, shoulder use), the designer should consider the following:

- right-of-way costs (temporary and permanent);
- additional construction costs;
- environmental effects;
- vehicular delay;
- user costs (including detour user costs; see Section 13-4.02(c)); and
- crash potential.

When determining the effect of each on-site option, the designer may also consider the effect the selected option will have on unofficial detours (i.e., detours which drivers select on their own to avoid the construction area).

13-4.02(b) Detours

For detours, the designer must determine the total cost of the detour. This includes:

- detour user costs; see Section 13-4.02(c);
- the cost for any improvements needed to the detour route (e.g., repaving, pavement widening, signal improvements);
- the effect the detour will have on the community and local businesses; and
- the effect on the local street network.

13-4.02(c) Detour User Costs

Adverse travel is the additional distance that motorists must travel to complete their trips around the work site while a detour is in use. To reduce project construction costs to the Department and to enable these savings to be used for other needed improvements, it is considered in the best interests of the public for road users to directly share in the costs of road and bridge improvements. Road users will bear some of the costs of reasonable adverse travel. Accordingly, this should be reflected during preparation of the TMA. Multiply the computed adverse travel costs by 0.5 before making any comparisons to the costs of other alternative methods of maintaining traffic flow.

Breakout the cost according to the following:

1. Cars, Pickups, and Vans. When computing operating costs for cars, pickups, and vans, the following publications may be used as a guide to determine the per mile (km) costs:

   - *Cost of Owning and Operating Automobiles and Vans* prepared by the Federal Highway Administration,
   - *Car Study* prepared by the Hertz Corporation, or
   - *Your Driving Costs* published by the American Automobile Association and available from Chicago Motor Club offices.

   Only the variable costs need to be considered in computing per mile (km) costs which include:

   - gasoline and oil;
   - maintenance, accessories, parts, and tires; and
   - State and Federal taxes on the above.

   Fixed costs (e.g., insurance, depreciation, license fees, finance charges) need not be considered because they are incurred whether or not a vehicle is driven extra miles (km).

2. Trucks. For truck operation costs, review the *Cost Summary Booklet* published by the Midwest Truckers Association. Only the variable costs need to be considered in computing per mile (km) costs for trucks. These costs include:

   - diesel fuel for tractor-trailer units and gasoline or diesel fuel for single-unit trucks;
   - tires;
   - maintenance (oil, grease, and repairs);
   - driver's wages and fringes; and
   - operating depreciation.

   Fixed costs (e.g., tractor or trailer replacement costs, Federal highway use tax, license fees, insurance, finance charges) need not be considered because they are incurred whether or not the vehicle is driven extra miles (km).

For any additional information on adverse travel costs or on the above listed publications, contact BDE.

13-5 TRAFFIC MANAGEMENT ANALYSIS REPORT

A Traffic Management Analysis (TMA) is required on all projects requiring road closure, detours, crossovers, lane shifts, or overnight lane closures. Projects requiring only daytime lane closures with flaggers will not necessitate TMA reporting.

13-5.01 Submittals

The following will apply:

1. Road Closure. If a road will be closed, submit six copies of the TMA Report, accompanied by a map designating the location of the improvement and the various detour alternatives, to BDE. BDE will retain one copy and transmit the other copies to the appropriate individuals for review. Submit the road closure TMA Report to BDE for review and approval prior to submitting the Phase I report.

2. Non-Closure. If a road will remain open by either stage construction or by a runaround, only submit a copy of the TMA in the project report to BDE for design approval.

13-5.02 Report Content

Include the following information in the TMA Report:

1. Summary. Include a statement in the beginning of the Report describing the proposed improvement, its location, and when construction is anticipated.

2. Traffic Characteristics. Note the expected ADT on the facility during construction, the functional classification of the road, and the percentage breakdown for each vehicular type. Also, segregate the traffic volumes according to the following:

   a. Through Traffic. Note the amount of through traffic within the construction zone. This is defined as traffic whose origin and destination is beyond the limits of the planned work site.

   b. Local Traffic. Indicate the amount of local access traffic within the construction zone. This is defined as traffic having its origin or destination (or both) within the limits of the planned work zone.

   The breakdown between through traffic and local traffic may be estimated or taken from records already available. It should be anticipated that a portion of the present ADT will independently disperse to alternative routes of its own choosing rather than using the designated detour. Origin and destination surveys will not be required except in cases where the district determines they are necessary.

3. Design. If it is proposed to maintain traffic flow around work sites by stage construction, crossovers, runaround, or local road detour, the TMA Report should address the design information included in Chapter 55.

4. Alternatives. List and describe all the practical alternatives considered; see Section 13-2.02. Note the preferred recommendation and list the reasons for this recommendation. In addition, each alternative discussion should address:

   a. Travel Distance. The adverse travel distance involved in the alternative and its economic effects on motorists. For user costs, see Section 13-4.02(c).

   b. Traffic Flow. Address how traffic flow will be maintained around or through the work site.

   c. Time. Note the length of time the traffic will be affected.

   d. Responsible Agency. Identify each agency which is responsible for the maintenance of each alternative.

   e. Cost. Provide a total cost estimate for each alternative. This should include the cost for major construction items, maintenance, right-of-way, and utilities. When a runaround will be used, include an estimate for any significant salvageable materials.

   f. Summary Table. Include a summary table that compares the total costs for the various alternatives.

   g. Itemized Costs. Where applicable, show the itemized costs for the recommended alternative.

5. Coordination. Discuss any coordination that was conducted with those who have input into the project or may be significantly affected by the project. This may include:

   a. Local Organizations. List any discussions conducted with emergency services, school districts, mass transit districts, local post offices, grain elevators and fertilizer businesses, recreational facilities, farmers, local businesses, and local agencies responsible for law enforcement and medical services.

   b. Local Officials. Include the results of any coordination with county officials, township highway commissioners, municipal officials, other local governmental agencies, and railroad or utility companies.

   c. State and Federal Agencies. Describe all coordination with any outside State and Federal agencies. For example, the coordination with the Illinois Department

of Natural Resources and Army Corps of Engineers relative to mitigation procedures for in-stream work; see Section 22-5.

Chapter Fourteen

INTERSECTION DESIGN STUDIES

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

Chapter Fourteen
INTERSECTION DESIGN STUDIES

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14-2	PREPARATION OF INTERSECTION DESIGN STUDIES	14-2(1)
14-3	DATA REQUIRED FOR INTERSECTION DESIGN STUDIES	14-3(1)
14-4	INTERSECTION DESIGN STUDY PROCESSING	14-4(1)

CHAPTER FOURTEEN
INTERSECTION DESIGN STUDIES

An intersection design study (IDS) is a graphic representation of a proposed treatment for the development or improvement of an intersection facility. It is based on an analysis of traffic needs and an evaluation of physical and economic elements at the intersection site. Chapter 14 presents the Department's criteria for the preparation of an IDS. Chapter 36 presents the detailed design criteria for intersections.

The primary purpose of an IDS is to provide a review medium for use by the district, BDE, and the general public. The IDS also provides a file reference that documents all pertinent data and information controlling the design of the intersection improvement.

14-1 WARRANTS FOR THE PREPARATION OF INTERSECTION DESIGN STUDIES

Prepare an IDS for intersections if any of the following conditions apply:

- The study location is an intersection of two marked routes.
- The improvement is intersected by either:
  - + a rural highway that has an existing 30th maximum hourly volume greater than 300 vehicles or additional lanes and/or channelization is proposed on one or both routes; or
  - + an urban highway that has an existing 30th maximum hourly volume greater than 400 vehicles or additional lanes and/or channelization is proposed on one or both routes.
- Where complex conditions exist at the intersection (e.g., high crash rate, adverse terrain features, geometric features that will be difficult to correct due to the extent of cultural development).
- When requested by the district or BDE in accordance with the engineering study and advance engineering data requirements in the *ILMUTCD*.

14-2 PREPARATION OF INTERSECTION DESIGN STUDIES

Prepare IDS plan sheets on CADD. For guidance on the preparation of plan or profile sheets, see Chapter 63. To facilitate uniformity, use the following sheet formats:

1. Sheet No. 1. An example of a Layout Sheet No. 1 is illustrated in Figure 14-2A. In urban areas, the intersection layout is usually drawn at a scale ratio of 1 in = 50 ft (1:500 metric) and in rural areas 1 in = 100 ft (1:1000 metric) or 1 in = 50 ft (1:500 metric). Sheet No. 1 is the cover sheet and contains the following items:

   - capacity analysis table,
   - turning movement diagram,
   - traffic data table,
   - north arrow,
   - data block for elements controlling design,
   - phasing diagram,
   - location map box,
   - general notes block, and
   - signature and title block in the lower right-hand corner.

2. Sheet No. 2. Sheet No. 2 is a supplemental sheet for intersection details. Depending on the complexity of the intersection and the need to show special details or cross sections, this sheet may not be required. In urban areas, the scale ratio is usually 1 in = 20 ft (1:250 metric) and in rural areas 1 in = 50 ft (1:500 metric). Also include the following items on the sheet:

   - title block in the lower right-hand corner; and
   - sheet index block in the upper right-hand corner indicating the route, section, county, and sheet numbers.

3. Sheet No. 3. Sheet No. 3 is a typical grid sheet for showing profiles. Use the format illustrated in Figure 14-2B. Also include the following items on the sheet:

   - title block in the lower right-hand corner; and
   - sheet index block in the upper right-hand corner indicating the route, section, county, and sheet numbers.

CAPACITY DESIGN ANALYSIS

4 PHASE
75 SEC. CYCLE
SIGNAL TYPE ACTUATED

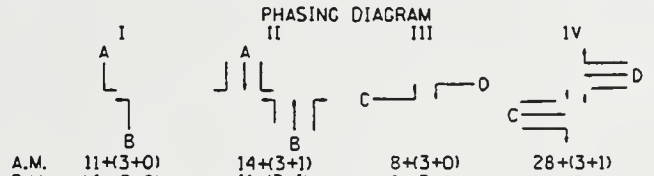
AREA OTHER
AVERAGE INTERSECTION DELAY
PROGRAM USED HCS-VERSION 2.4C

PEAK HOUR FACTOR 0.95
A.M. 13.5 SEC.
P.M. 23.1 SEC.

INTERSECTION LEVEL OF SERVICE
A.M. B
P.M. C

APPROACH		A			B			C			D		
BUS STOP CONDITION			—			—			—			—	
PARKING MANEUVER/HR.			—			—			—			—	
PEDESTRIANS			50			50			50			50	
ARRIVAL TYPE			3			3			3			3	
LANE UTILIZATION FACTOR		1.00	1.05		1.00	1.00	1.00	1.00	1.05	1.00	1.00	1.05	
BASE SATURATION FLOW		1900	1900		1900	1900	1900	1900	1900	1900	1900	1900	
0 - DISTANCE		25m	—		65m	—	25m	35m	—	45m	27m	—	
LANE GROUP		L	TR		L	T	R	L	T	R	L	TR	
LANE WIDTHS		3.35m	2x3.35m		3.35m	3.35m	3.35m	3.6m	2x3.6m	3.6m	3.6m	2x3.6m	
GREEN TIME (SECONDS)	A.M.	11.0	14.0		11.0	14.0	14.0	8.0	28.0	28.0	8.0	28.0	
	P.M.	14.0	11.0		14.0	11.0	11.0	8.0	28.0	28.0	8.0	28.0	
LANE GROUP DELAY (SECONDS)	A.M.	10.4	17.9		16.3	17.6	17.2	7.8	11.5	12.6	6.2	13.4	
	P.M.	10.9	28.1		30.5	26.5	19.1	10.9	11.9	12.1	6.3	30.3	
V/C RATIO	A.M.	0.26	0.45		0.73	0.38	0.30	0.41	0.43	0.53	0.20	0.65	
	P.M.	0.35	0.83		0.91	0.73	0.36	0.51	0.49	0.48	0.15	0.98	
LEVEL OF SERVICE	A.M.	B	C		C	C	C	B	B	B	B	B	
	P.M.	B	D		D	D	C	B	B	B	B	D	
2020 30TH MAX. HOUR TRAFFIC	A.M.	105	255		260	120	80	100	530	290	60	785	
	P.M.	130	370		335	180	75	125	600	260	40	1180	
2000 8TH MAX. HOURLY TRAFFIC	A.M.		151			198			421			388	
	P.M.		204			253			451			567	

PHASING DIAGRAM

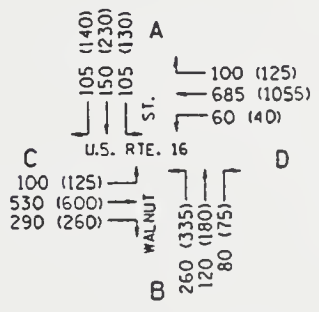


	I	II	III	1V
A.M.	11+(3+0)	14+(3+1)	8+(3+0)	28+(3+1)
P.M.	14+(3+0)	11+(3+1)	8+(3+0)	28+(3+1)

GREEN + (AMBER + ALL RED)

TRAFFIC DATA

MOVEMENT	YEAR 2000 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY	YEAR 2020 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB	115	165	3					150	230
AD	80	100	3					105	130
AC	80	105	3					105	140
BA	100	150	3					120	180
BC	200	260	3					260	335
BD	60	50	3					80	75
CD	460	520	5.2					530	600
CA	80	100	5.2					100	125
CB	225	200	5.2					290	260
DC	585	900	5.3					685	1055
DB	40	30	5.3					60	40
DA	80	100	5.3					100	125
TOTAL A	535	720	2000 AOT=6,900			2020 AOT=8,900		680	930
TOTAL B	740	855	2000 AOT=9,500			2020 AOT=12,400		960	1120
TOTAL C	1630	2085	2000 AOT=22,700			2020 AOT=27,000		1970	2515
TOTAL D	1305	1700	2000 AOT=18,700			2020 AOT=21,500		1560	2025



2020 DHV A.M. (P.M.)

CAPACITY DESIGN ANALYSIS

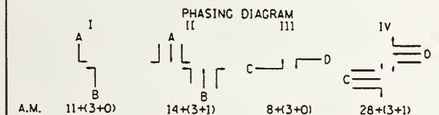
4 PHASE
75 SEC. CYCLE
SIGNAL TYPE ACTUATED

AREA OTHER
AVERAGE INTERSECTION DELAY
PROGRAM USED HCS-VERSION 2.4C

PEAK HOUR FACTOR 0.95
A.M. 13.5 SEC. P.M. 23.1 SEC.
INTERSECTION LEVEL OF SERVICE A.M. B P.M. C

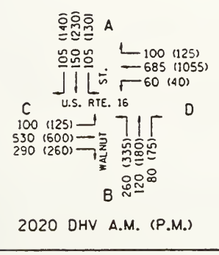
APPROACH		A			B			C			D		
BUS STOP CONDITION			—			—			—			—	
PARKING MANEUVER/HR.			—			—			—			—	
PEDESTRIANS			50			50			50			50	
ARRIVAL TYPE			3			3			3			3	
LANE UTILIZATION FACTOR		1.00	1.05		1.00	1.00	1.00	1.00	1.05	1.00	1.00	1.05	
BASE SATURATION FLOW		1900	1900		1900	1900	1900	1900	1900	1900	1900	1900	
D - DISTANCE		25m	—		65m	—	25m	35m	—	45m	27m	—	
LANE GROUP		L	TR		L	T	R	L	T	R	L	TR	
LANE WIDTHS		3.35m	2x3.35m		3.35m	3.35m	3.35m	3.6m	2x3.6m	3.6m	3.6m	2x3.6m	
GREEN TIME (SECONDS)	A.M.	11.0	14.0		11.0	14.0	14.0	8.0	28.0	28.0	8.0	28.0	
	P.M.	14.0	11.0		14.0	11.0	11.0	8.0	28.0	28.0	8.0	28.0	
LANE GROUP DELAY (SECONDS)	A.M.	10.4	17.9		16.3	17.6	17.2	7.8	11.5	12.6	6.2	13.4	
	P.M.	10.9	28.1		30.5	26.5	19.1	10.9	11.9	12.1	6.3	30.3	
V/C RATIO	A.M.	0.26	0.45		0.73	0.38	0.30	0.41	0.43	0.53	0.20	0.65	
	P.M.	0.35	0.83		0.91	0.73	0.36	0.51	0.49	0.48	0.15	0.98	
LEVEL OF SERVICE	A.M.	B	C		C	C	C	B	B	B	B	B	
	P.M.	B	D		D	D	C	B	B	B	B	D	
2020 30TH MAX. HOUR TRAFFIC	A.M.	105	255		260	120	80	100	530	290	60	785	
	P.M.	130	370		335	180	75	125	600	260	40	1180	
2000 8TH MAX. HOURLY TRAFFIC	A.M.		151			198			421			388	
	P.M.		204			253			451			567	

PHASING DIAGRAM



TRAFFIC DATA

MOVEMENT	YEAR 2000 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30TH MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY	YEAR 2020 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB	115	165	3					150	230
AD	80	100	3					105	130
AC	80	105	3					105	140
BA	100	150	3					120	180
BC	200	260	3					260	335
BD	60	50	3					80	75
CD	460	520	5.2					530	600
CA	80	100	5.2					100	125
CB	225	200	5.2					290	260
DC	585	900	5.3					685	1055
DB	40	30	5.3					60	40
DA	80	100	5.3					100	125
TOTAL A	535	720	2000 ADT= 6,900		2020 ADT=8,900			680	930
TOTAL B	740	855	2000 ADT= 9,500		2020 ADT=12,400			960	1120
TOTAL C	1630	2085	2000 ADT= 22,700		2020 ADT=27,000			1970	2515
TOTAL D	1305	1700	2000 ADT= 18,700		2020 ADT=21,500			1560	2025



2020 DHV A.M. (P.M.)

ELEMENTS CONTROLLING DESIGN

1. ROUTE (STREET) F.A.P. RTE. 1234 (U.S. RTE. 16/MAIN ST.) WITH WALNUT ST.
2. HIGHWAY FUNCTIONAL CLASSIFICATION: US RTE 16 - PRINCIPAL ARTERIAL; WALNUT ST. - URBAN COLLECTOR
3. AVERAGE DAILY TRAFFIC (ADT) DATA:
   FAP RTE 1234 EXISTING 22,700 (2000) DESIGN 27,000 (2020)
   WALNUT ST. EXISTING 9500 (2000) DESIGN 12,400 (2020)
4. F.A.P. RTE. 1234 (U.S. RTE. 16/MAIN ST.) IS THE PREFERENCE ROUTE
5. ANTICIPATED YEAR OF CONSTRUCTION 2000 DESIGN YEAR 2020
6. TRAFFIC CONTROL TO BE TRAFFIC SIGNALS. EXISTING SIGNALS ARE TO BE MODERNIZED.
   WARRANTS MET WARRANT I
7. DESIGN CRITERIA: W & RS
8. DESIGN VEHICLE: B-12 NORTH, WB-15 SOUTH
9. TRUCK ROUTE DESIGNATION US 16 IS CLASS II

	U.S. RTE. 16	WALNUT ST.
10. DESIGN SPEED	60 km/hr	60 km/hr
11. POSTED SPEED:	35 MPH	35 MPH

12. PEDESTRIANS USAGE: YES BICYCLES USAGE: NA

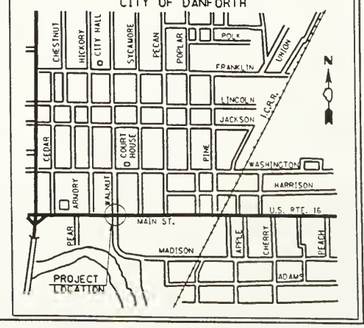
GENERAL NOTES

1. PROFILES ARE PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1.0 PERCENT ON WALNUT ST.
2. TYPE B-15.60 CURB AND GUTTER TO BE USED ON OUTER EDGES OF PAVEMENT
3. TYPE B-15.60 CURB AND GUTTER TO BE USED ON CHANNELIZING ISLAND
4. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT UNLESS OTHERWISE NOTED.
5. ENTRANCES SHALL CONFORM TO THE POLICY ON "ACCESS TO STATE HIGHWAYS".
6. CURBS TO BE DEPRESSED AT CROSSWALKS TO MEET ADA.
7. SIDEWALKS AND R.O.W. ARE SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS.
8. INTERSECTION IS/NOT A HIGH ACCIDENT LOCATION - YEAR:
9. SCOPE OF WORK:
10. DESIGN EXCEPTIONS:

IDS Sheet No. 1
Figure 14-2A

20 0 20
GRAPHIC SCALE

LOCATION MAP
CITY OF DANFORTH



DRAWING NO.

INTERSECTION DESIGN STUDY

F.A.P. ROUTE 1234 (U.S. RTE. 16) (MAIN ST.)
WITH
ROUTE (WALNUT ST.)

SEC. NO.(54,43Z-3)(W,RS),(127,19,8,63)(W,RS-1)&35(W,RS-2)
SCALE 1:500 COUNTY MERIDIAN
SJN : P-90-042-97 REV. NO. 42640
DESIGNED BY DATE 6/97

SATISFACTORY DISTRICT GEOMETRICS ENGINEER DATE
SATISFACTORY DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE
SATISFACTORY DISTRICT OPERATIONS ENGINEER DATE
APPROVED DISTRICT ENGINEER DATE

CADD FILE NAME : ( ) I.D.S. SHEET 1 OF 2

CAPACITY DESIGN ANALYSIS

4 PHASE
75 SEC. CYCLE
SIGNAL TYPE ACTUATED

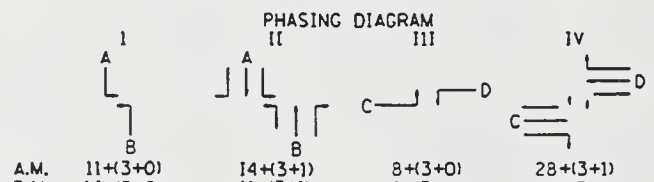
AREA OTHER
AVERAGE INTERSECTION DELAY
PROGRAM USED HCS-VERSION 2.4C

PEAK HOUR FACTOR 0.95
A.M. 13.5 SEC.
P.M. 23.1 SEC.

INTERSECTION LEVEL OF SERVICE
A.M. B
P.M. C

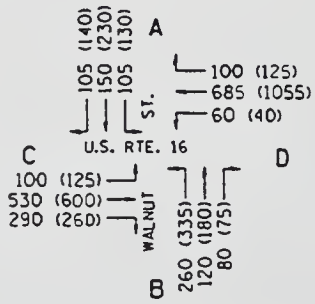
APPROACH		A			B			C			D		
BUS STOP CONDITION			—			—			—			—	
PARKING MANEUVER/HR.			—			—			—			—	
PEDESTRIANS			50			50			50			50	
ARRIVAL TYPE			3			3			3			3	
LANE UTILIZATION FACTOR		1.00	1.05		1.00	1.00	1.00	1.00	1.05	1.00	1.00	1.05	
BASE SATURATION FLOW		1900	1900		1900	1900	1900	1900	1900	1900	1900	1900	
D - DISTANCE		25m	—		65m	—	25m	35m	—	45m	27m	—	
LANE GROUP		L	TR		L	T	R	L	T	R	L	TR	
LANE WIDTHS		3.35m	2x3.35m		3.35m	3.35m	3.35m	3.6m	2x3.6m	3.6m	3.6m	2x3.6m	
GREEN TIME (SECONDS)	A.M.	11.0	14.0		11.0	14.0	14.0	8.0	28.0	28.0	8.0	28.0	
	P.M.	14.0	11.0		14.0	11.0	11.0	8.0	28.0	28.0	8.0	28.0	
LANE GROUP DELAY (SECONDS)	A.M.	10.4	17.9		16.3	17.6	17.2	7.8	11.5	12.6	6.2	13.4	
	P.M.	10.9	28.1		30.5	26.5	19.1	10.9	11.9	12.1	6.3	30.3	
V/C RATIO	A.M.	0.26	0.45		0.73	0.38	0.30	0.41	0.43	0.53	0.20	0.65	
	P.M.	0.35	0.83		0.91	0.73	0.36	0.51	0.49	0.48	0.15	0.98	
LEVEL OF SERVICE	A.M.	B	C		C	C	C	B	B	B	B	B	
	P.M.	B	D		D	D	C	B	B	B	B	D	
2020 30TH MAX. HOUR TRAFFIC	A.M.	105	255		260	120	80	100	530	290	60	785	
	P.M.	130	370		335	180	75	125	600	260	40	1180	
2000 8TH MAX. HOURLY TRAFFIC	A.M.		151			198			421			388	
	P.M.		204			253			451			567	

PHASING DIAGRAM



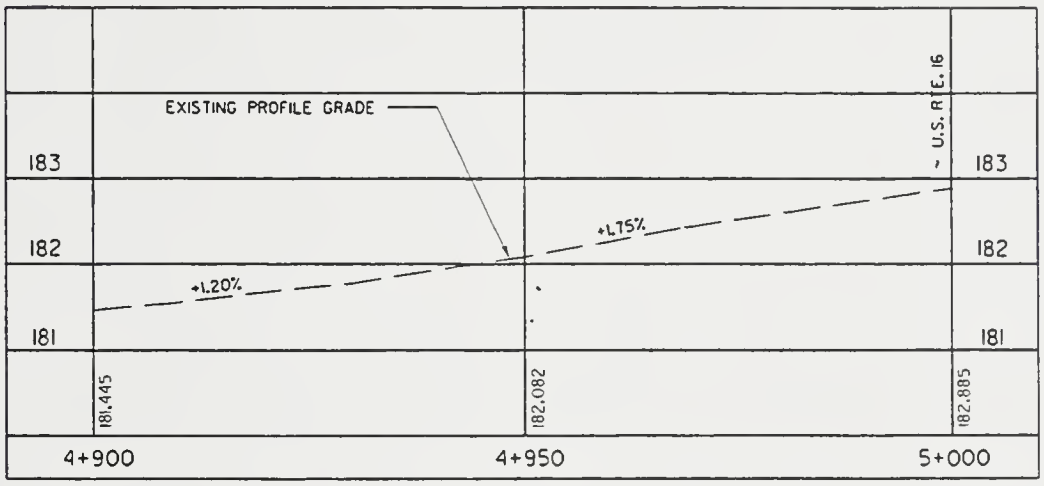
TRAFFIC DATA

MOVEMENT	YEAR 2000 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY	YEAR 2020 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB	115	165	3					150	230
AD	80	100	3					105	130
AC	80	105	3					105	140
BA	100	150	3					120	180
BC	200	260	3					260	335
BD	60	50	3					80	75
CD	460	520	5.2					530	600
CA	80	100	5.2					100	125
CB	225	200	5.2					290	260
DC	585	900	5.3					685	1055
DB	40	30	5.3					60	40
DA	80	100	5.3					100	125
TOTAL A	535	720	2000 ADT=6,900			2020 ADT=8,900		680	930
TOTAL B	740	855	2000 ADT=9,500			2020 ADT=12,400		960	1120
TOTAL C	1630	2085	2000 ADT=22,700			2020 ADT=27,000		1970	2515
TOTAL D	1305	1700	2000 ADT=18,700			2020 ADT=21,500		1560	2025

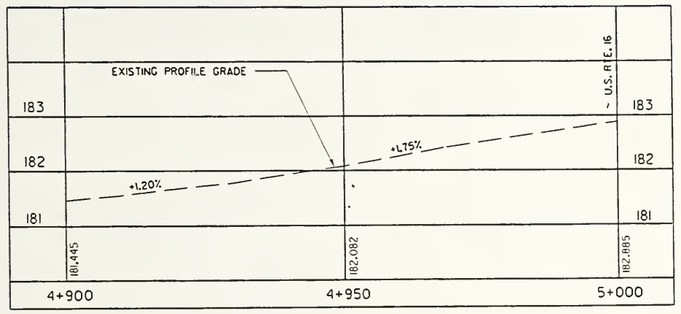


2020 DHV A.M. (P.M.)

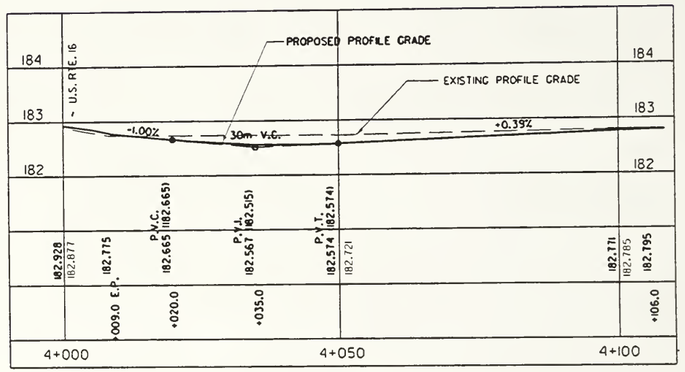
S. WALNUT ST.


EXISTING PROFILE GRADE
~ U.S. RTE. 16
+1.75%
+1.20%
183
182
181
181.445
182.082
182.885
4+900
4+950
5+000

S. WALNUT ST.



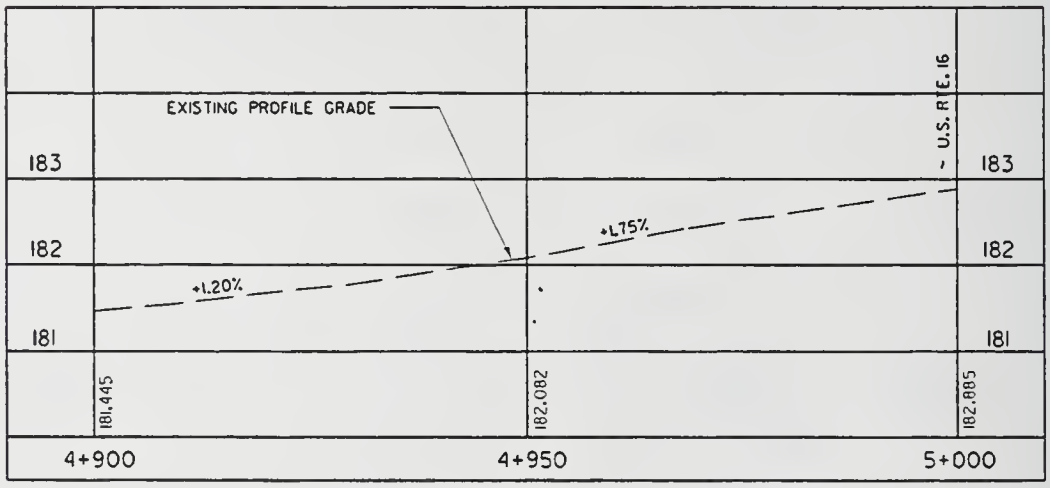
N. WALNUT ST.



IDS Sheet No. 3
Figure 14-2B

DRAWING NO. _____
INTERSECTION DESIGN STUDY
FAP RDUTE 1234 (U.S. RTE. 16) (MAIN ST.)
___ RDUTE ___ WITH (WALNUT ST.)
SEC. NO. (54,43Z-3)(W,RS)(127,19,8,63)(W,RS-1)&35(W,RS-2)
SCALE 1:50 VERT. 1:500 HORIZ.
COUNTY MERIDIAN
SJN : P-90-042-97
PROJ. NO. 42640
CADD FILE NAME : ( )
I.D.S. SHEET 2 OF 2

S. WALNUT ST.


EXISTING PROFILE GRADE
+1.20%
+1.75%
~ U.S. RTE. 16
183
182
181
181.445
182.082
182.885
4+900
4+950
5+000

14-3 DATA REQUIRED FOR INTERSECTION DESIGN STUDIES

Document the following data in the IDS:

1. Elements Controlling Design. Chapter 36 presents the design criteria for intersections. On Sheet No. 1, list all pertinent elements affecting the design of the intersection including:

   - the intersection route designation including highway functional classification, SRA Route designation, if appropriate, proposed design speed, and existing and design traffic (ADT and year) for both intersecting routes;
   - the preferential route;
   - the anticipated year of construction;
   - the type of traffic control including:
     + a statement indicating whether signals will be installed or adjusted;
     + the warrant, or combination of warrants, from the *ILMUTCD* justifying the use of signal control;
   - design criteria;
   - design vehicle;
   - truck route designation;
   - existing and proposed posted speeds (mph) on all intersection approaches (proposed posted speeds should be equal to or less than the design speeds); and
   - pedestrian and bicycle usage at intersection.

2. General Notes. Include the following information in the general notes on Sheet No. 1:

   a. Grades. Where all existing grades to remain are greater than 1% or in all cases with any new or altered grades, include a statement that profiles are shown for both intersecting roads and show them on Sheet No. 3. If existing grades are to remain and are all less than 1%, indicate this fact and state that no profiles are shown.

b. Curb and Gutter. Indicate the type of curb and gutter to be used on the outer edges of the traveled way, shoulders, channelizing islands, and corner islands. Only use mountable type curbing on corner islands.

c. Dimensions. Indicate the type of dimensioning used (e.g., edge-to-edge of pavement, edge-to-edge of traveled way).

d. Design Exceptions. List any deviations from design criteria (see Section 31-8) and typical traffic control practice (e.g., large truck turning encroachments, lane widths less than Department criteria, less than desirable level of service, less than desirable storage length for queued vehicles, angle of intersection less than 60°). Include the justification for design exceptions in the Phase I report.

e. Access to State Highways. State if the design complies with the criteria in Section 36-7 or list any instances of noncompliance.

f. Crashes. Note if the intersection is a high-accident location (HAL) and, if so, what year.

g. Terrain. Describe any unusual terrain features that could affect the design.

h. Cultural Development. Indicate adjacent cultural development that influences the intersection layout.

i. Improvement Type. List the type of improvement (e.g., new construction, reconstruction, 3R, safety).

j. Bicycle Route. Note the existence of designated bicycle routes through the intersection.

k. Sight Distance. On two-way stop-controlled intersections, note if intersection sight distance is met.

l. Verification. Note the method used to verify sufficiency of intersection to accommodate turning movements of the design vehicle.

m. Right-of-Way. Indicate if proposed right-of-way limits for the intersection are preliminary.

n. Truck Routes. Note the existence of designated truck routes through the intersection.

o. Other. Include any additional information not listed elsewhere that will aid in the review of the IDS.

3. Capacity Analysis. Perform and document the capacity analysis of the IDS according to the following guidelines:

   a. Source Document. Use the *Highway Capacity Manual* and the *Highway Capacity Software* (distributed by the McTrans Center for Microcomputers in Transportation) for the capacity analyses. The use of any other capacity techniques and software must be first approved by BDE; see Section 36-1.07.

   b. Signal Phasing. In diagrammatic form, illustrate the proposed signal phasing required to obtain the desired level of service. Orient the signal phasing diagram to be consistent with the plan view of the intersection and any other pertinent diagrams.

   c. Results. Document the data and results of the capacity analysis on Sheet No. 1 for each leg of the intersection in a table as illustrated in Figure 14-3A.

4. Traffic Data. Provide the following traffic data on Sheet No 1:

   a. Traffic Movements. Provide a tabular listing of all movements to and from each leg of the intersection. Use the format illustrated in Figure 14-3B. Also, prepare a traffic diagram for the design year showing all DHV movements within the intersection. Orient the traffic diagram to be consistent with the plan view of the intersection and any other pertinent diagrams.

   b. Existing Volumes. Calculate the 8th maximum hourly volume per day from actual traffic counts to determine whether traffic signal warrants are met. See the *ILMUTCD* for additional guidance.

   c. Proposed Volumes. For new intersections or where proposed intersection improvements for large developments will significantly increase traffic volumes, traffic signals may be justified where the 8th maximum hourly volume three years after construction exceeds the values stated in the warrants. The three years time frame should be increased in the event of staged development. The 8th maximum daily hourly volume may be considered as 55% of the projected 30th maximum hour volume. See the *ILMUTCD* for additional guidance.

   d. Pedestrians. Where pedestrian control signal heads are proposed, provide a pedestrian count.

5. Intersection Layout and Design. Provide the following intersection layout and design information on Sheets No. 1 and No. 2:

   a. Centerline. Show the centerline information for all proposed and existing curves within the immediate area of the intersection. Include superelevation rates and transition stations. Label the station equation for all intersecting side roads.

b. Angle. Note the angle of intersection between the two roadways.

c. Location Map. Provide a small scale location map, covering a sufficient area to properly identify the location of the improvement. It should portray the existing street or local road network and any municipalities adjacent to the improvement. Layout the map with North in the same direction as shown on the intersection layout.

d. Auxiliary Lane Lengths. Indicate lengths for all auxiliary lanes.

e. Tapers. Indicate all taper lengths and rates.

f. Scales. Provide a bar scale on each sheet.

g. Topographic Features. Indicate all limiting topographic features or cultural developments including:

- existing and proposed access driveways;
- existing and proposed right-of-way lines and any access control limits;
- property lines;
- property owners, business names, land uses, and buildings;
- sidewalks, curb ramps, and other accessibility requirements, see Chapter 58; and
- other factors controlling the intersection design (e.g., retaining walls, utilities, gasoline pumps, other appurtenances).

h. Signals. Show the proposed signal locations and signal phasing diagram. Prepare these according to the criteria and guidelines presented in Chapter 57. This information is required to ensure compatibility with other design elements, right-of-way, and traffic flow (progression).

i. Signs. For complex intersections, show the proper placement of signs and traffic control devices. Because signing distance and legend requirements could influence the design of complex facilities, include a preliminary signing plan with the IDS for all complex intersection designs.

j. Striping. Include the proposed striping details on the IDS.

k. Control Points. Provide the station and offset of all control points, including all island noses, radius return points of curvature and tangency, and centerline or baseline control points.

6. Title Block. Only the individual personally responsible for the intersection design will occupy the "Designed By" line in the title block.

CAPACITY DESIGN ANALYSIS

_____ PHASE
_____ SEC. CYCLE
SIGNAL TYPE _____

AREA_____
AVERAGE INTERSECTION DELAY A.M. _____ SEC.
PROGRAM USED _____ P.M. _____ SEC.

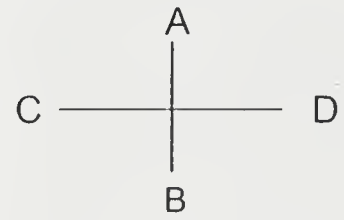
PEAK HOUR FACTOR _____
INTERSECTION LEVEL OF SERVICE A.M. _____
P.M. _____

APPROACH		A			B			C			D		
BUS STOP CONDITION													
PARKING MANEUVER/HR.													
PEDESTRIANS													
ARRIVAL TYPE													
THROUGH LANE UTILIZATION FACTOR													
BASE SATURATION FLOW RATE													
D-DISTANCE													
LANE GROUP													
LANE WIDTHS													
GREEN TIME (SECONDS)	A.M.												
	P.M.												
G/C Ratio	A.M.												
	P.M.												
LANE GROUP DELAY (SECONDS)	A.M.												
	P.M.												
V/C RATIO	A.M.												
	P.M.												
LEVEL OF SERVICE	A.M.												
	P.M.												
20__ 30TH MAX. HOUR TRAFFIC	A.M.												
	P.M.												
20___ 8TH MAX. HOURLY TRAFFIC	A.M.												
	P.M.												

CAPACITY DESIGN ANALYSIS SUMMARY
Figure 14-3A

TRAFFIC DATA									
Movement	Year 20____ 30th Maximum Hour Traffic		Percent Truck Traffic in 30th Maximum Hour	Estimated Percent Increase by 20____	Year 20____ 30th Maximum Hour Traffic		Estimated Percent Increase by 20____	Year 20 ___ 30th Maximum Hour Traffic	
	A.M.	P.M.			A.M.	P.M.		A.M.	P.M.
AB (T)									
AD (L)									
AC (R)									
BA (T)									
BC (L)									
BD (R)									
CD (T)									
CA (L)									
CB (R)									
DC (T)									
DB (L)									
DA (R)									
TOTAL A									
TOTAL B									
TOTAL C									
TOTAL D									

T = Through, L = Left, R = Right



TRAFFIC DATA SUMMARY
Figure 14-3B

14-4 INTERSECTION DESIGN STUDY PROCESSING

Intersection design studies are normally prepared under the direction of the District Geometrics Engineer. Upon completion of the IDS, it is approved by the district as illustrated in the signature block in Figure 14-2A and forwarded to BDE for final acceptance for inclusion in the Phase I report.

When projects require an IDS, the district should not conduct public involvement activities without an approved IDS. When an IDS is prepared by a certified Geometrics Engineer and reviewed according to current geometric design policies, it may be included as part of the Phase I report without advance approval by BDE. However, if an IDS contains design elements that deviate from current geometric design policies or if it has not been prepared according to current geometric engineering review procedures, submit the IDS to BDE for review and approval before including it in a Phase I report. Before submittal, obtain all appropriate signatures on the IDS and prepare a transmittal memo that summarizes the key points of the study. If a consultant has prepared the IDS, the memo also must state that the IDS has been reviewed by the district before submittal to BDE.

In some cases, concurrence in the design of an intersection by BDE may be given concurrently with design approval of the final Phase I report. This ensures the consideration of social, economic, and environmental factors and public comments that could affect the design elements of an intersection. In addition, an crash analysis and relevant collision diagrams may be reviewed concurrently with the IDS.

If intersection conditions are complex, the district, at its option, may forward the IDS to BDE for early review and approval. In this case, the IDS is reviewed with particular emphasis on compliance with accepted design practices, methods of managing or controlling access, intersection capacity, signal phasing, operational safety, efficiency, and any needed design exceptions. BDE may recommend changes to the IDS. If changes are recommended, the comments are forwarded to the district for revision. After the revised IDS is reviewed and considered satisfactory, it is then approved by BDE for inclusion in the Phase I report.

Chapter Fifteen

INTERCHANGE TYPE AND DESIGN STUDIES

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

Chapter Fifteen
INTERCHANGE TYPE AND DESIGN STUDIES

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15-1.02 Guidelines for Preparing Interchange Type Studies ..... 15-1(2)
15-1.03 Processing Interchange Type Studies ..... 15-1(5)

15-2 INTERCHANGE DESIGN STUDIES ..... 15-2(1)

15-2.01 Guidelines for Preparing Interchange Design Studies ..... 15-2(1)
15-2.02 Processing Interchange Design Studies ..... 15-2(2)

CHAPTER FIFTEEN
INTERCHANGE TYPE AND DESIGN STUDIES

Chapter 37 presents criteria for determining the warrants, application, and selection of various interchange types.

15-1 INTERCHANGE TYPE STUDIES AND ADDITIONS

The functional classification of the crossroad has a significant impact on whether an interchange is warranted and the type of interchange selected. In addition, traffic operations (e.g., freeway ramp terminal spacing, mainline weaving, level of service, signing) may affect the interchange type and spacing, especially in urban areas. The following sections present guidelines on the preparation and processing of Interchange Type Studies.

15-1.01 Purpose of Interchange Type Studies (ITS)

Interchange Type Studies are prepared to gain BDE concurrence for the preferred type, to aid in developing the design of the selected type, and to minimize the number of man-hours used before detailed design studies are initiated. When a corridor/design study is initiated for a new freeway or expressway, the Phase I project study group prepares a brief report that includes proposed interchange locations and describes the proposed interchange type at each location.

An existing freeway may require an additional interchange due to urban development or due to lack of proper access to an area, or an expressway may require the upgrading of an existing intersection to an interchange. In all cases, the proposal to provide an interchange must be justified and documented and may require an Interchange Type Study. Section 37-1 provides the guidelines for justification of need, and the results of the entire Study are documented in a report entitled "Request for Additional (Modified) Interstate (Freeway or Expressway) Access."

As part of the access report, include the necessary information as discussed in Chapter 19 and in Part III, Environmental Procedures, that demonstrates the public benefits and need for an interchange (i.e., the "Purpose and Need"). See Chapter 35 for details on access control along the crossroad.

If the district determines that a conventional diamond or parclo Type C interchange is the most appropriate type of interchange at a particular location, an Interchange Type Study is not required and, therefore, no submittal to BDE is necessary. However, if the district determines that such a review is beneficial, Interchange Type Studies may be prepared and submitted to BDE for review and approval.

For complex interchanges, BDE involvement in type studies is required because of the larger number of alternatives requiring analysis and the typically higher costs. Complex interchange designs usually require more supporting information, such as:

- crossroad, ramp, and mainline profiles;
- access restrictions;
- weaving analyses;
- capacity analyses of entrance and exit terminals;
- lane balance;
- route continuity coordination;
- preliminary signing plans;
- topography;
- existing cultural developments; and
- cost estimates.

If sufficient detail is submitted to BDE with the Interchange Type Study, geometric approval may be provided concurrently with interchange type approval.

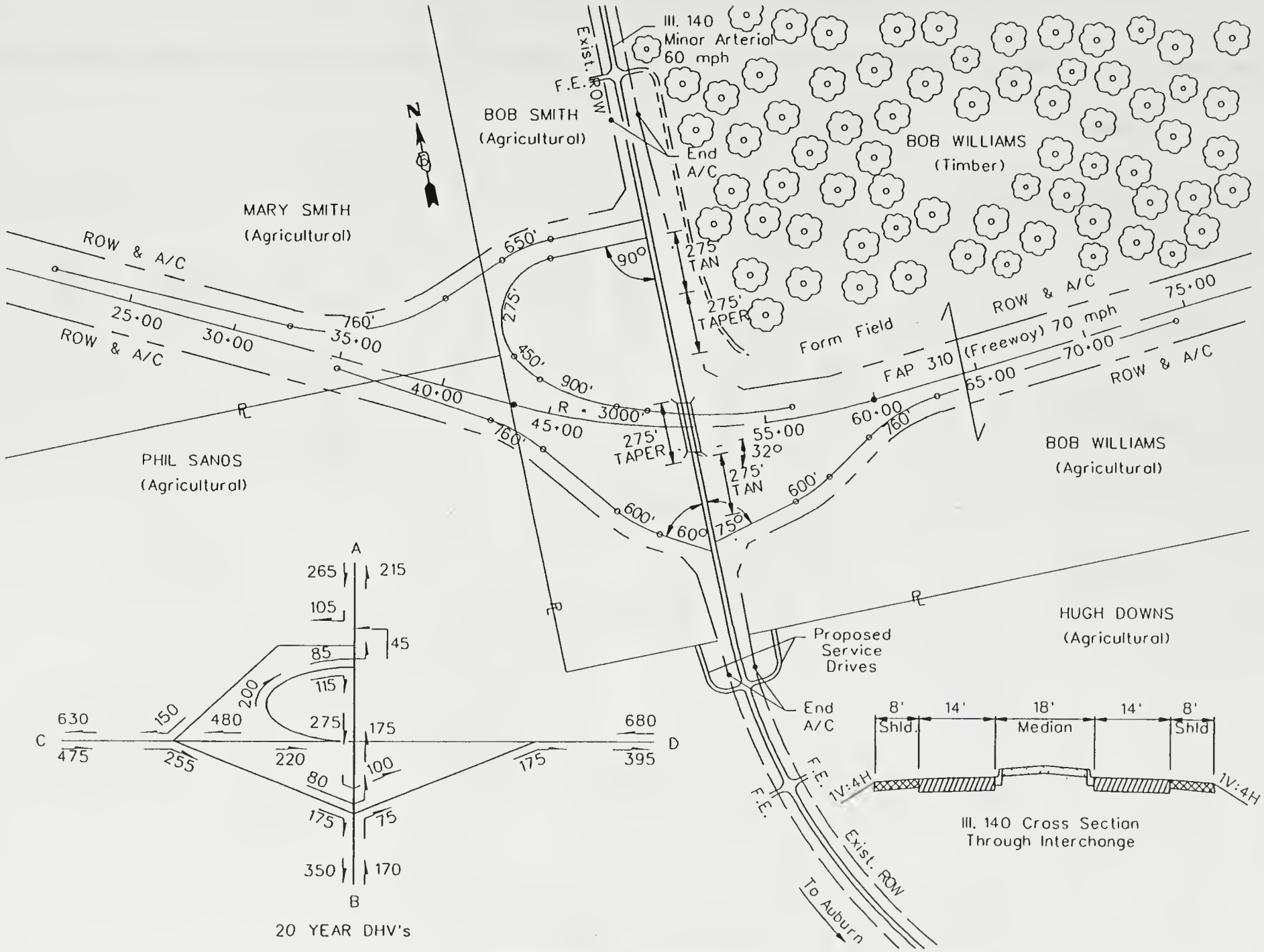
15-1.02 Guidelines for Preparing Interchange Type Studies

Use the following guidelines to prepare the Interchange Type Study:

1. Base Exhibits. Prepare a schematic drawing of the interchange layout on a print of an aerial mosaic or aerial mapping using a scale of 1 in = 400 ft (1:5000 metric) or 1 in = 600 ft (1:7500 metric). For complex interchanges, use a scale of 1 in = 200 ft (1:2500 metric) for rural areas and either a 1 in = 100 ft (1:1000 metric) or 1 in = 50 ft (1:500 metric) scale for urban areas. Figure 15-1A illustrates a typical schematic drawing of an interchange layout. In addition, it is desirable to include a county map and a 0°7′30″ quadrangle map as exnibits with the ITS. In urban areas, also include a city map showing the proposed interchange location(s).

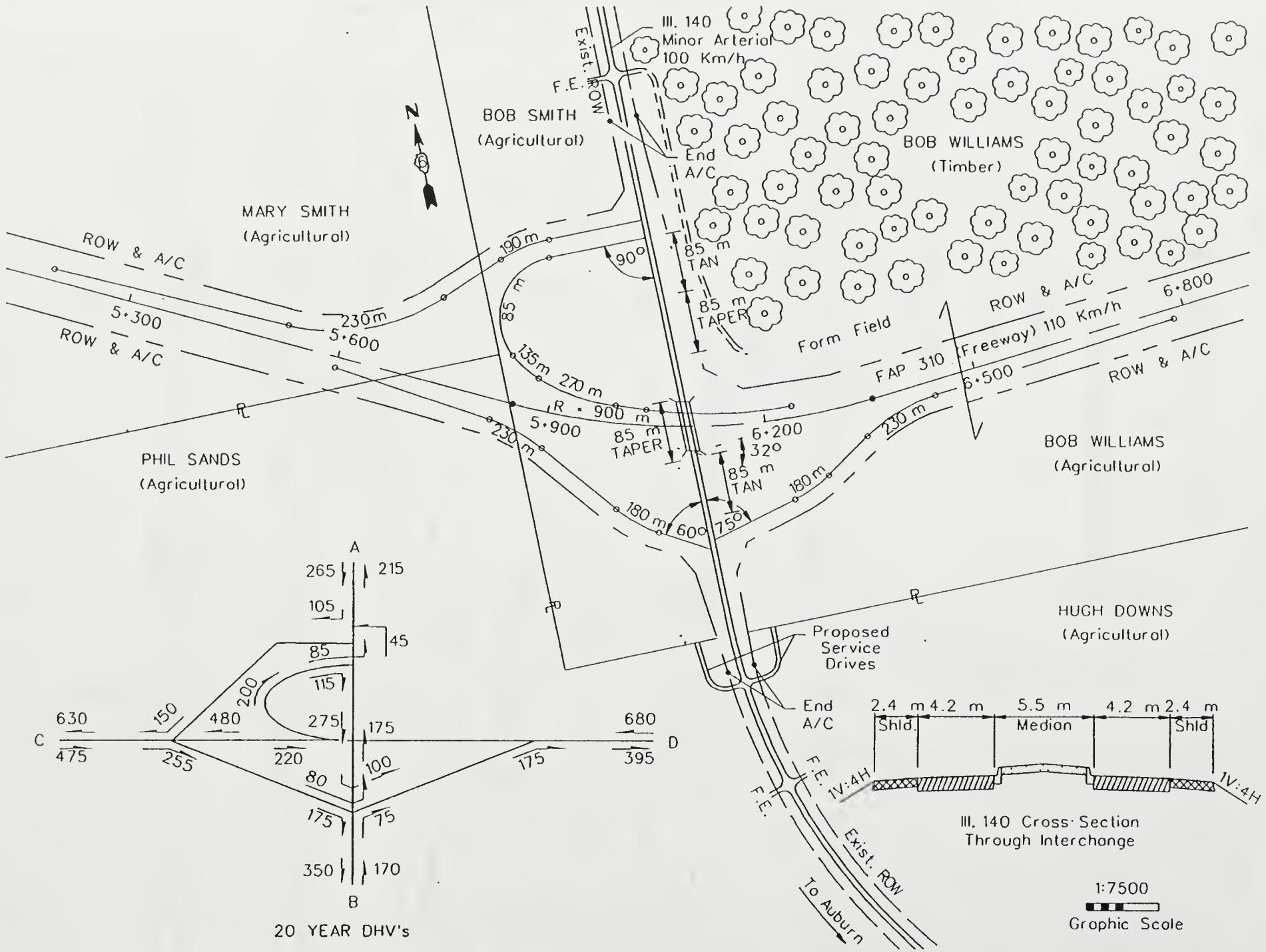
2. Alternatives. When interchange type selection is controversial, prepare alternative schematics on separate aerial mosaics. Indicate which alternative is preferred and the rationale used in the selection.

3. Content. Schematic drawings may be prepared in the form of a single-line diagram. Show the layout of the mainline, crossroad, and ramps. Include the following information:



Note: Sketches for type approval are normally drawn on aerial photography, and the sketch in this figure depicts the usual features shown on the photography.

TYPICAL SCHEMATIC OF AN INTERCHANGE TYPE STUDY
(US Customary)
Figure 15-1A



Note: Sketches for type approval are normally drawn on aerial photography, and the sketch in this figure depicts the usual features shown on the photography.

TYPICAL SCHEMATIC OF AN INTERCHANGE TYPE STUDY
(Metric)

Figure 15-1A

- traffic flow diagram for projected DHV (e.g., typically based on 20 years);
- functional classification, design speed, and design traffic volumes of both routes;
- angle of intersection between mainline and crossroad;
- angle of intersection between ramps and crossroad;
- typical cross sections, including shoulder widths;
- all existing and proposed radii of ramps and roadways;
- lengths of left-turn lanes and taper rates;
- limits of access control along the crossroad;
- limits of ramps on the mainline and crossroad;
- any proposed structures;
- any proposed local road relocation and frontage roads or service drives;
- property lines and names of land owners; and
- any relevant photographs of the area.

4. Special Conditions. List any special conditions (e.g., wetlands, historic site, archeological site) that support the development of an unusual interchange type, and include all necessary elements that control the design. Provide a statement regarding satisfactory alignments and profiles in conjunction with the design. If the development of preliminary profiles are necessary, include them with the ITS.

15-1.03 Processing Interchange Type Studies

The district is responsible for preparing the Interchange Type Study. The district should submit the study to BDE for review, concurrence, or approval, as necessary.

Once the type study, interchange addition, or proposed change in access has been accepted by BDE and, where necessary FHWA, the district office may initiate the preparation of the Interchange Design Study as discussed in Section 15-2.

15-2 INTERCHANGE DESIGN STUDIES

Interchange Design Studies (IDS) are required for all interchange facilities. After the interchange type approval has been received, preparation of the IDS can be initiated. However, before design work is started, a field review should be made to each interchange location. The following sections discuss the guidelines and procedures for preparing an IDS.

15-2.01 Guidelines for Preparing Interchange Design Studies

IDS base sheets are standardized and available on CADD files. These standardized sheet sizes along with formatting details are used in developing IDSs. In general, prepare the IDS in the same manner as an intersection design study; see Chapter 14 for format details. Figures 15-2A, 15-2B, 15-2C, 15-2D, and 15-2E illustrate the typical format that should be used for uniformity on IDS plans. In addition, consider the following guidelines:

1. General.

   a. Drafting. The entire IDS is prepared on CADD. A controlled-scale aerial mosaic or aerial mapping usually is the base for development of the IDS. This base is the visual description of the existing topography. Photographic inserts may be added for additional clarification.

   b. Scales. For interchange designs on new alignment, use topographic mapping at 1 in = 200 ft (1:2500 metric) for the interchange layout. This scale allows the entire interchange to be shown on one sheet without match lines and also allows all property lines and roads to be shown around the interchange. If the interchange is being developed as a result of a planned upgrade of an existing route, usually an expressway design, use a scale ratio of either 1 in = 100 ft (1:1000 metric) or 1 in = 50 ft (1:500 metric). Also, for interchange designs in urban areas, the same scale ratios of either 1 in = 100 ft (1:1000 metric) or 1 in = 50 ft (1:500 metric) may be used. Larger scales aid in the decision-making process, especially where cultural land development or elevation restrictions are an issue.

2. First Sheet. Include the following information on the first sheet:

   a. Topography/Cultural Features. Include all houses, businesses, major utilities, roads and streets, right-of-way, access control lines, and structures on the topographic mapping. If contour lines are desired, plot them as light lines so they do not detract from the line work of the proposed interchange.

   b. General Notes. Include references to design exceptions, crash data, cultural development, terrain, improvement type, etc. See Section 14-3 for additional information.

c. Elements Controlling Design. Chapter 37 presents the design criteria for interchanges. On Sheet No. 1, list all pertinent elements affecting the design of the interchange.

d. Interchange Layout. Include horizontal alignment details, stationing, and proposed structures.

e. Capacity Analysis Table. For ramp/crossroad intersections, include the capacity analysis table in the upper left-hand corner. This table summarizes the results of the capacity analysis. See Chapter 14 for an example of the format.

3. Second Sheet. Show the details for each ramp/crossroad intersection, any specially designed free-flow terminals, and how the crossroad turn lanes are designed. If more space is needed, use an additional sheet for details. See Figure 15-2B. Select a scale that will allow the details to be clearly shown. Include the capacity table for free-flow ramp terminals; see Figure 15-2F. If weaving areas are proposed, also include a weaving analysis table as illustrated in Figure 15-2G. This table should include a summary of the ramp capacity analysis and the number of lanes required.

4. Profiles. After the crossroad details, show the profiles for the mainline and crossroad through the interchange; see Figure 15-2C. Next, include the profiles for each ramp; see Figure 15-2D. Where necessary, include detailed profiles for each turning roadway at the ramp crossroad intersections.

5. Cross Sections. After the profile sheets, show all the necessary controlling cross sections adjacent to the mainline, a cross section for the mainline, if applicable, and a typical section of the ramp proper; see Figure 15-2E. Figures in Chapter 37 indicate the locations where controlling ramp cross sections should be taken.

6. Interchange Models. For very complex interchanges, it may be desirable or necessary to prepare a model for evaluating alternative interchange design features. This can be accomplished using a computer software package (i.e., GEOPAK) or by preparing a simple, three-dimensional model. The model may be developed by mounting the plan layout onto thin cardboard and then pasting the mainline, crossroad, and ramp profiles onto the plan sheet of the roadway alignment.

15-2.02 Processing Interchange Design Studies

The Interchange Design Study is prepared under the direction of the District Geometrics Engineer. Once the IDS has been reviewed and approved by the applicable district personnel, forward the IDS to BDE for review and approval. With the IDS plan sheets, include a memorandum detailing the major design features of the interchange. Where necessary, after BDE has completed its review and approval, BDE will forward the IDS to FHWA for its review and concurrence.

After approval of the geometrics and capacity analysis by BDE and, where necessary, by FHWA the district office will be notified in writing that the interchange design is satisfactory. This notification allows the IDS to be included in the Phase I report, and it can then be used for public involvement activities. Without BDE approval and, when necessary, FHWA concurrence, an IDS cannot be used for public involvement activities.

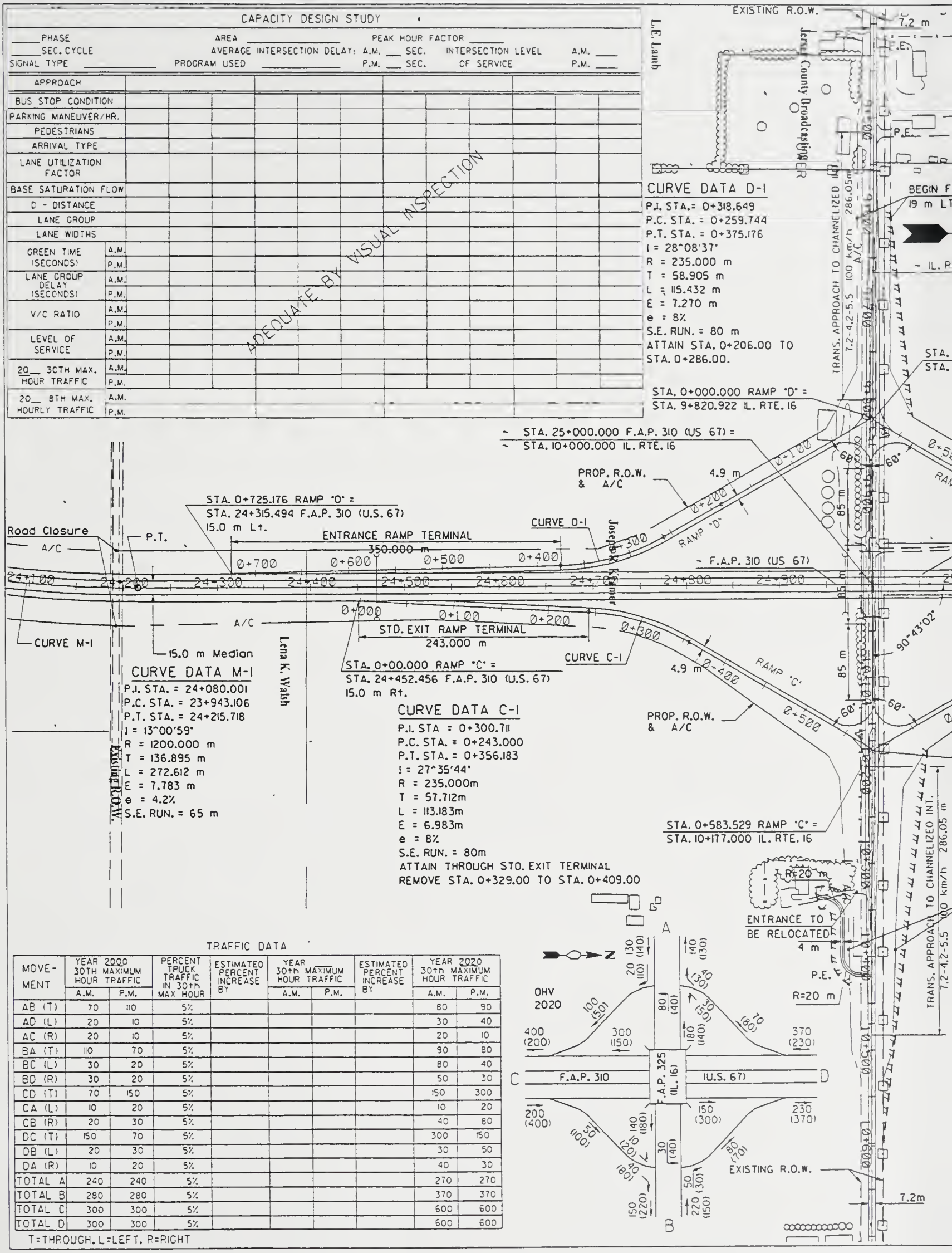
Final approval of an Interchange Design Study is given with design approval of the Phase I report or Request for Additional Freeway Access Report. This final approval ensures that the social, economic, and environmental factors have been properly considered. Once the Phase I report has been approved, the IDS can then be used in the preparation of the detailed construction plans.

CAPACITY DESIGN STUDY

_____PHASE
_____SEC. CYCLE
SIGNAL TYPE _____
AREA _____
AVERAGE INTERSECTION DELAY: A.M. ___ SEC. P.M. ___ SEC.
PROGRAM USED _____
PEAK HOUR FACTOR _____
INTERSECTION LEVEL OF SERVICE A.M. ____ P.M. ____

APPROACH													
BUS STOP CONDITION													
PARKING MANEUVER/HR.													
PEDESTRIANS													
ARRIVAL TYPE													
LANE UTILIZATION FACTOR													
BASE SATURATION FLOW													
D - DISTANCE													
LANE GROUP													
LANE WIDTHS													
GREEN TIME (SECONDS)	A.M.												
	P.M.												
LANE GROUP DELAY (SECONDS)	A.M.												
	P.M.												
V/C RATIO	A.M.												
	P.M.												
LEVEL OF SERVICE	A.M.												
	P.M.												
20__ 30TH MAX. HOUR TRAFFIC	A.M.												
	P.M.												
20__ 8TH MAX. HOURLY TRAFFIC	A.M.												
	P.M.												

ADEQUATE BY VISUAL INSPECTION



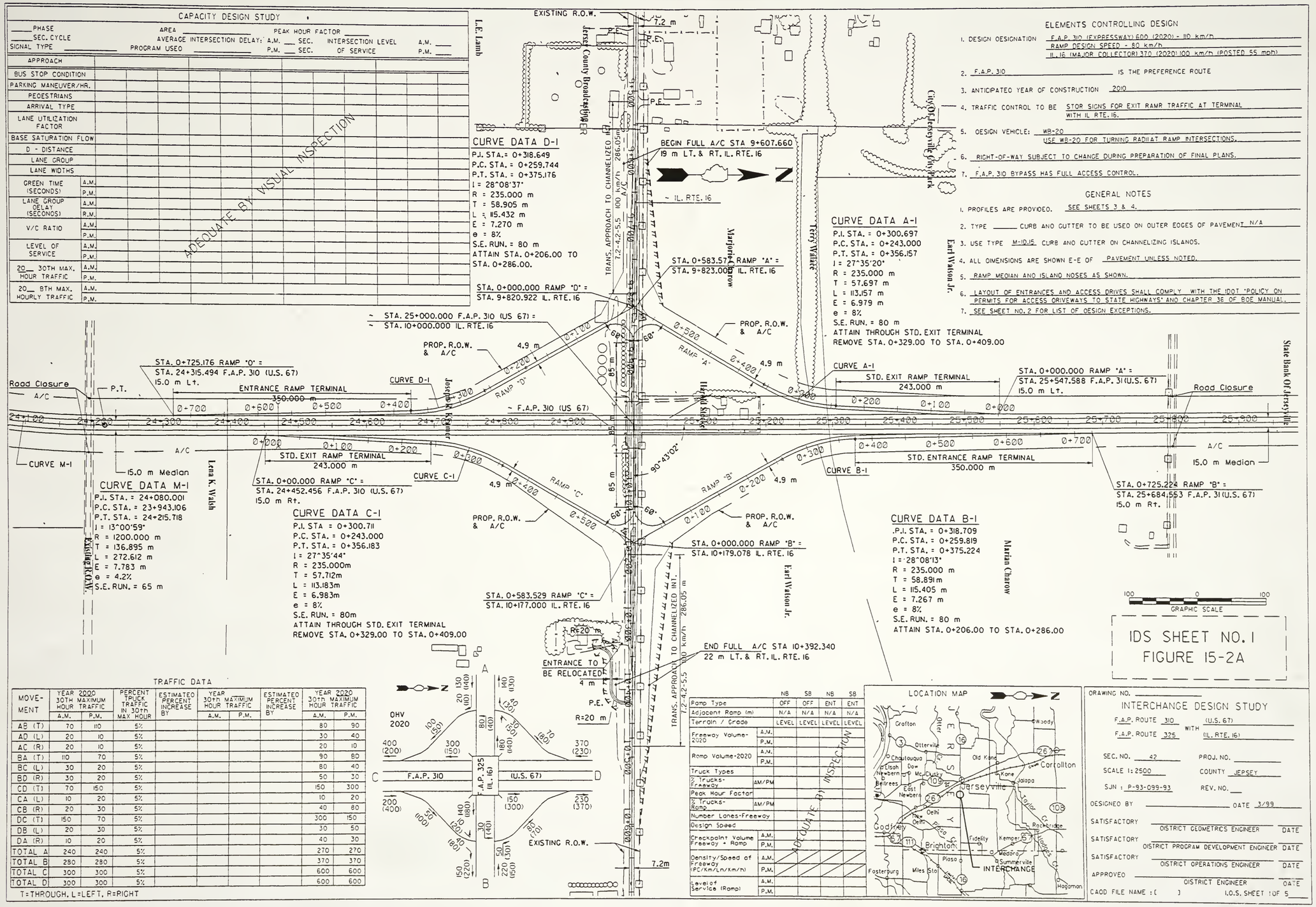
TRAFFIC DATA

MOVEMENT	YEAR 2000 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY	YEAR 2020 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB (T)	70	110	5%					80	90
AD (L)	20	10	5%					30	40
AC (R)	20	10	5%					20	10
BA (T)	110	70	5%					90	80
BC (L)	30	20	5%					80	40
BD (R)	30	20	5%					50	30
CD (T)	70	150	5%					150	300
CA (L)	10	20	5%					10	20
CB (R)	20	30	5%					40	80
DC (T)	150	70	5%					300	150
DB (L)	20	30	5%					30	50
DA (R)	10	20	5%					40	30
TOTAL A	240	240	5%					270	270
TOTAL B	280	280	5%					370	370
TOTAL C	300	300	5%					600	600
TOTAL D	300	300	5%					600	600

T=THROUGH, L=LEFT, R=RIGHT

EXAMPLE ID
(General Layout

Figure



EXAMPLE IDS SHEET
(General Layout — First Sheet)

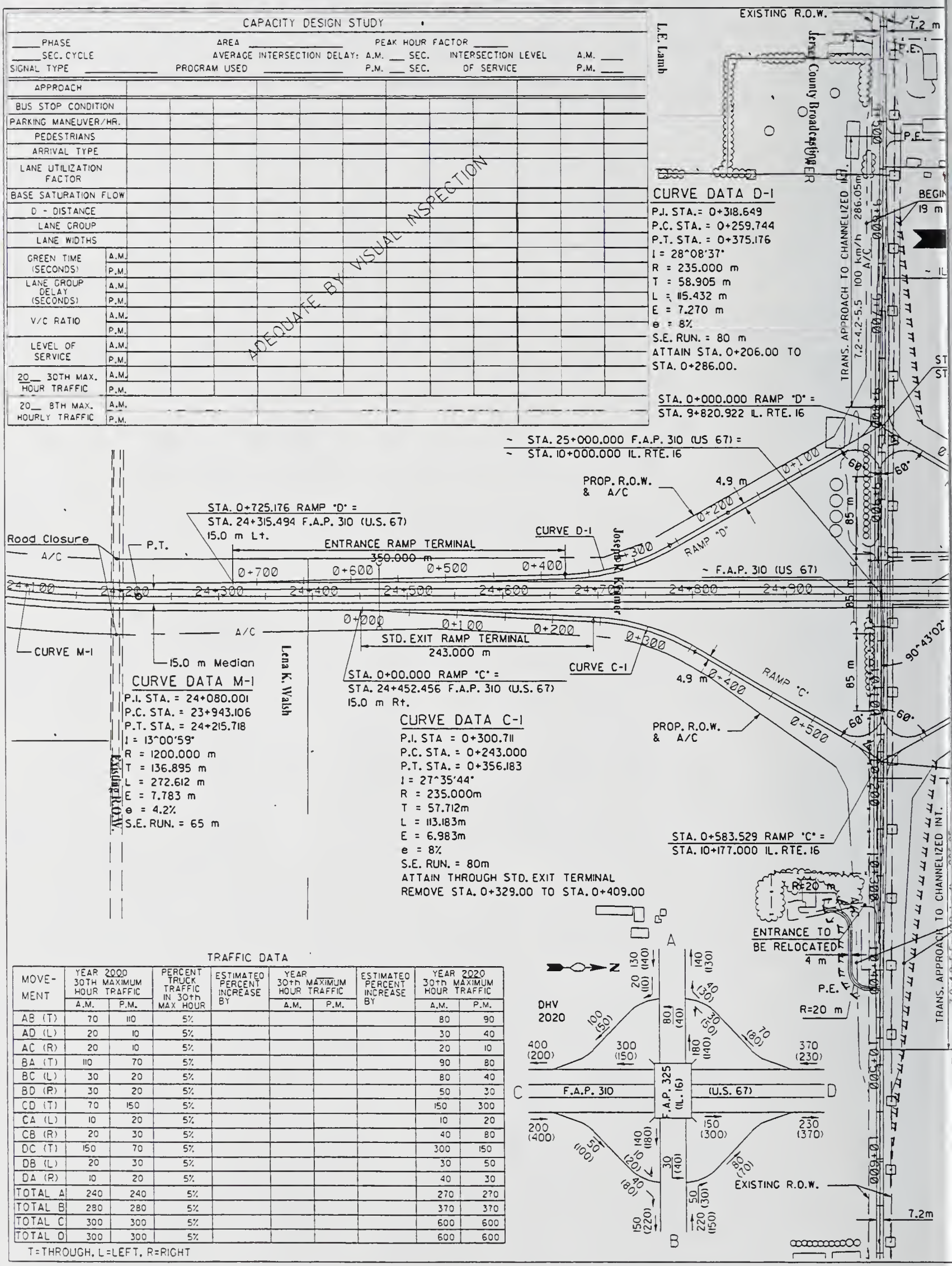
Figure 15-2A

CAPACITY DESIGN STUDY

_____ PHASE
_____ SEC. CYCLE
SIGNAL TYPE _____
AREA _____
AVERAGE INTERSECTION DELAY: A.M. ___ SEC. P.M. ___ SEC.
PEAK HOUR FACTOR _____
INTERSECTION LEVEL OF SERVICE A.M. ____ P.M. ____
PROGRAM USED _____

APPROACH												
BUS STOP CONDITION												
PARKING MANEUVER/HR.												
PEDESTRIANS												
ARRIVAL TYPE												
LANE UTILIZATION FACTOR												
BASE SATURATION FLOW												
D - DISTANCE												
LANE GROUP												
LANE WIDTHS												
GREEN TIME (SECONDS)	A.M.											
	P.M.											
LANE GROUP DELAY (SECONDS)	A.M.											
	P.M.											
V/C RATIO	A.M.											
	P.M.											
LEVEL OF SERVICE	A.M.											
	P.M.											
20__ 30TH MAX. HOUR TRAFFIC	A.M.											
	P.M.											
20__ 8TH MAX. HOURLY TRAFFIC	A.M.											
	P.M.											

ADEQUATE BY VISUAL INSPECTION

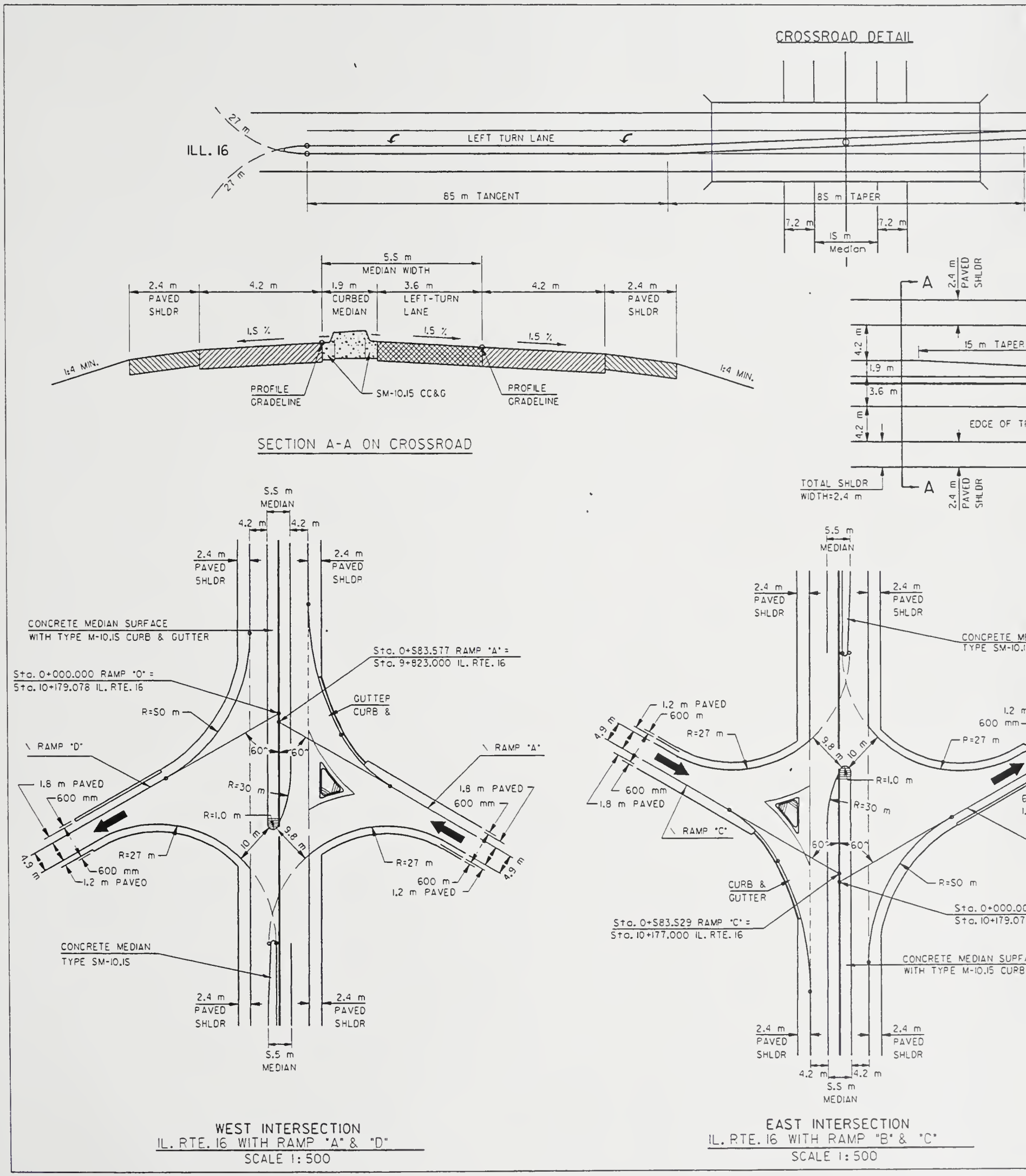


TRAFFIC DATA

MOVEMENT	YEAR 2000 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY	YEAR 2020 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB (T)	70	110	5%					80	90
AD (L)	20	10	5%					30	40
AC (R)	20	10	5%					20	10
BA (T)	110	70	5%					90	80
BC (L)	30	20	5%					80	40
BD (R)	30	20	5%					50	30
CD (T)	70	150	5%					150	300
CA (L)	10	20	5%					10	20
CB (R)	20	30	5%					40	80
DC (T)	150	70	5%					300	150
DB (L)	20	30	5%					30	50
DA (R)	10	20	5%					40	30
TOTAL A	240	240	5%					270	270
TOTAL B	280	280	5%					370	370
TOTAL C	300	300	5%					600	600
TOTAL D	300	300	5%					600	600

T=THROUGH, L=LEFT, R=RIGHT

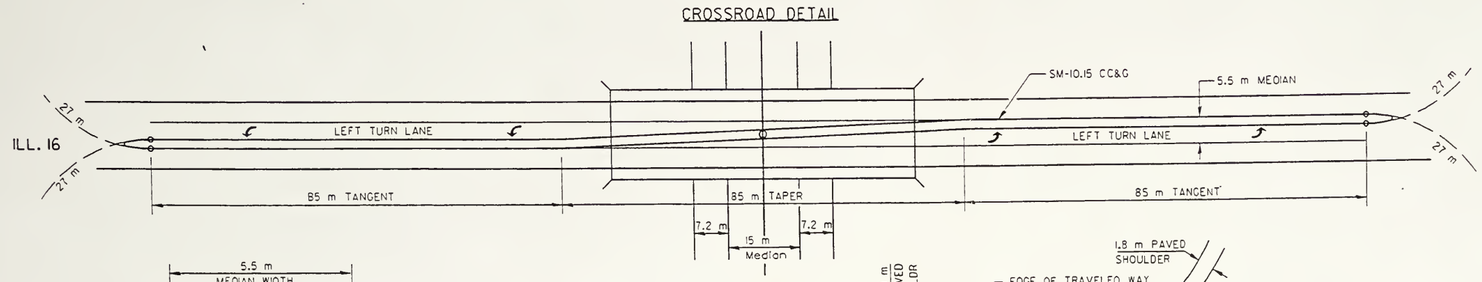
EXAMPLE I
(General Layout
Figure

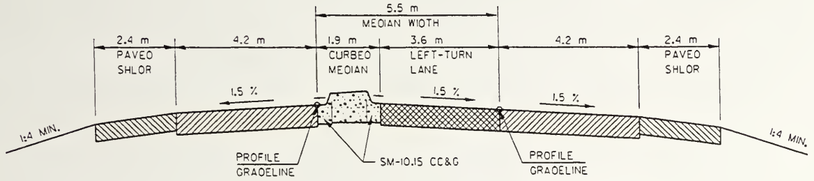


EXAMPLE
(Ramp Crossroad Det

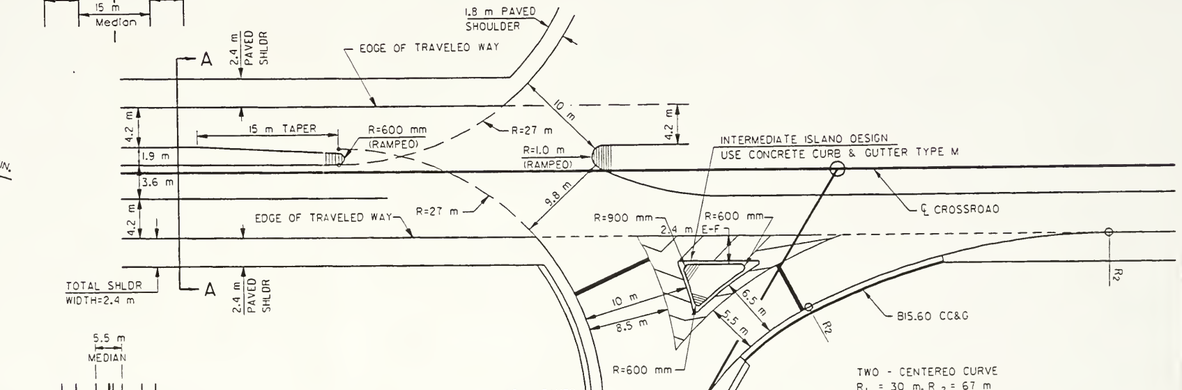
Figure

CROSSROAD DETAIL





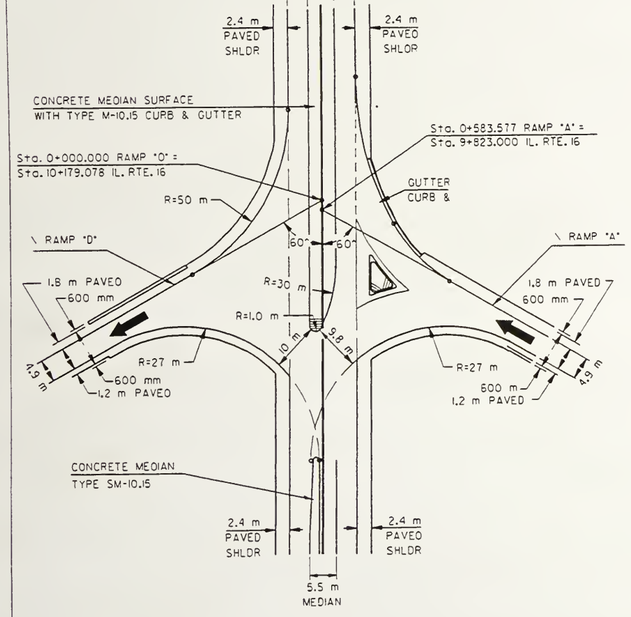
SECTION A-A ON CROSSROAD



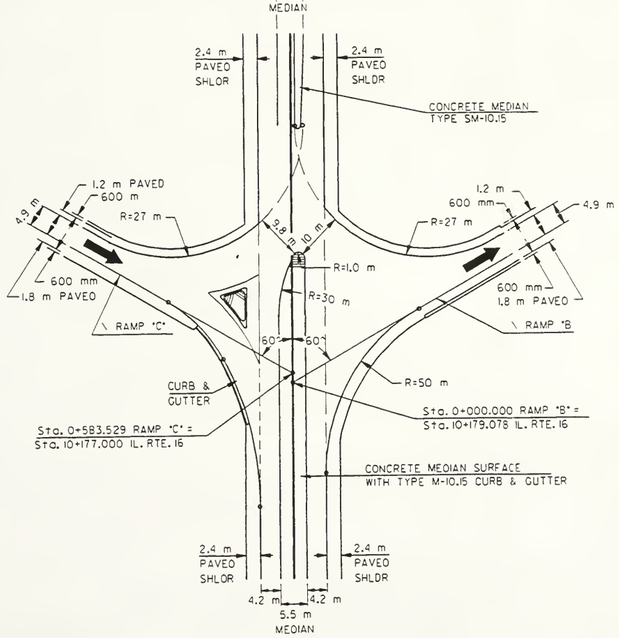
INTERSECTION DETAILS
SCALE 1: 250

List of Design Exceptions and Justifications

1. No Exceptions Required.



WEST INTERSECTION
IL. RTE. 16 WITH RAMP "A" & "D"
SCALE 1: 500



EAST INTERSECTION
IL. RTE. 16 WITH RAMP "B" & "C"
SCALE 1: 500

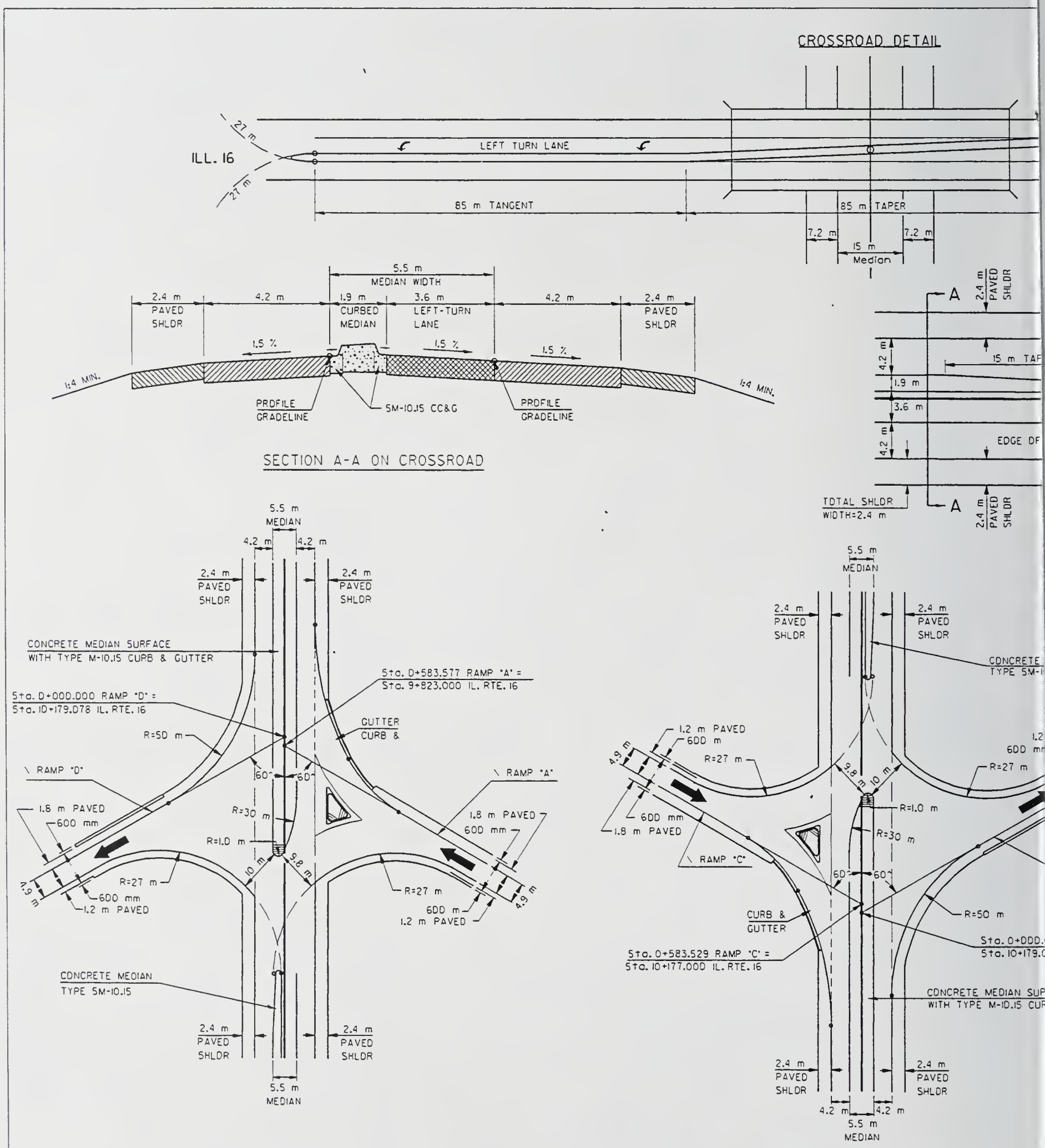
IDS SHEET NO. 2
FIGURE 15-2B

INTERCHANGE DESIGN STUDY

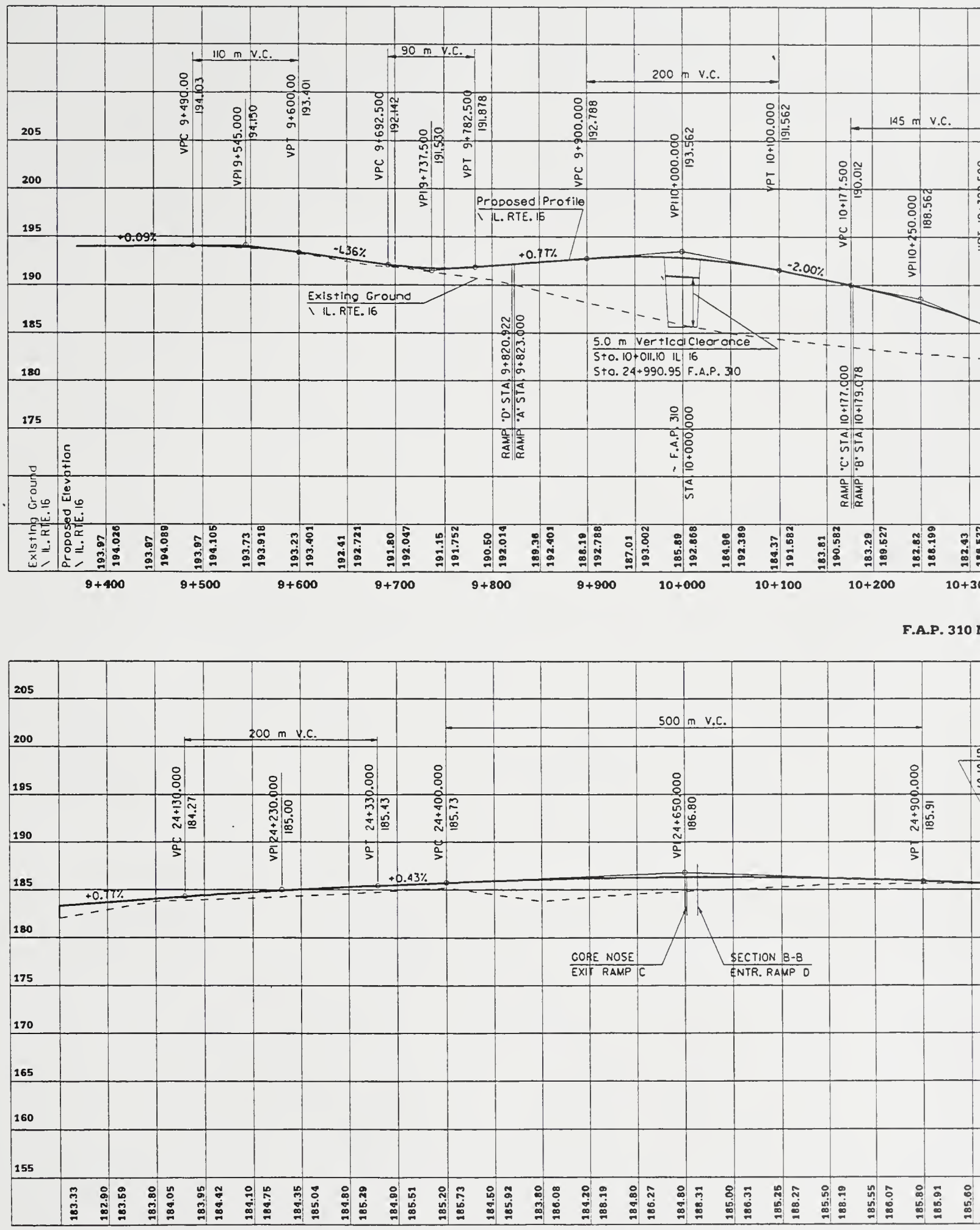
F.A.P. ROUTE 310 (U.S. 67)
WITH
F.A.P. ROUTE 325 IL. RTE. 16
SEC. NO 42 PROJ. NO
SCALE 1: 500 COUNTY JERSEY
INN : 1. NO.
SJN : P-93-099-93 REV. NO.
DESIGNED DATE 3/99
SHEET 2 OF 5

EXAMPLE IDS SHEET
(Ramp Crossroad Details — Second Sheet)

Figure 15-2B



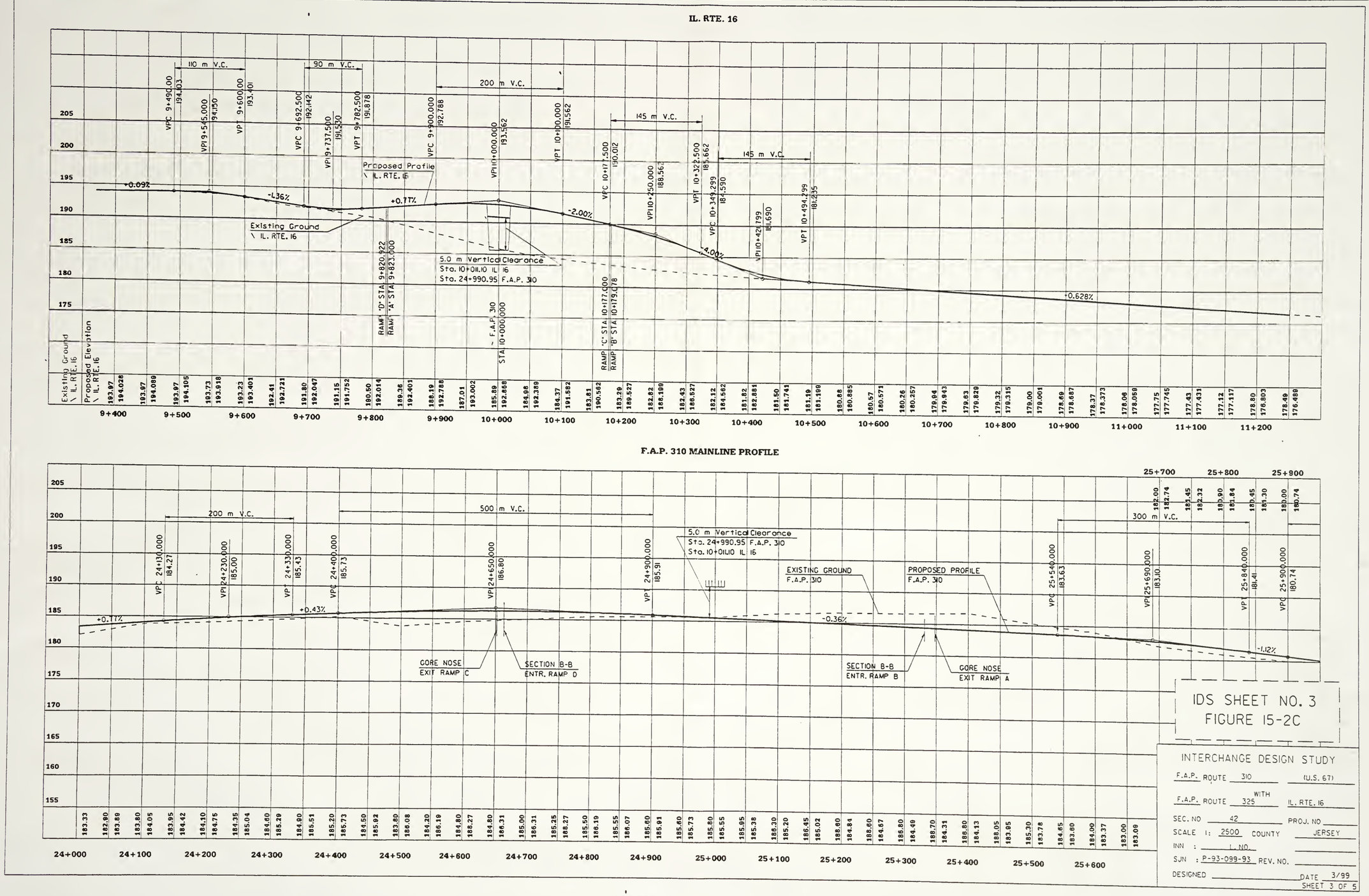
EXAMPLE
(Ramp Crossroad De
Figur



F.A.P. 310 I

EXAMPLE I
(Mainline and Cro

Figure



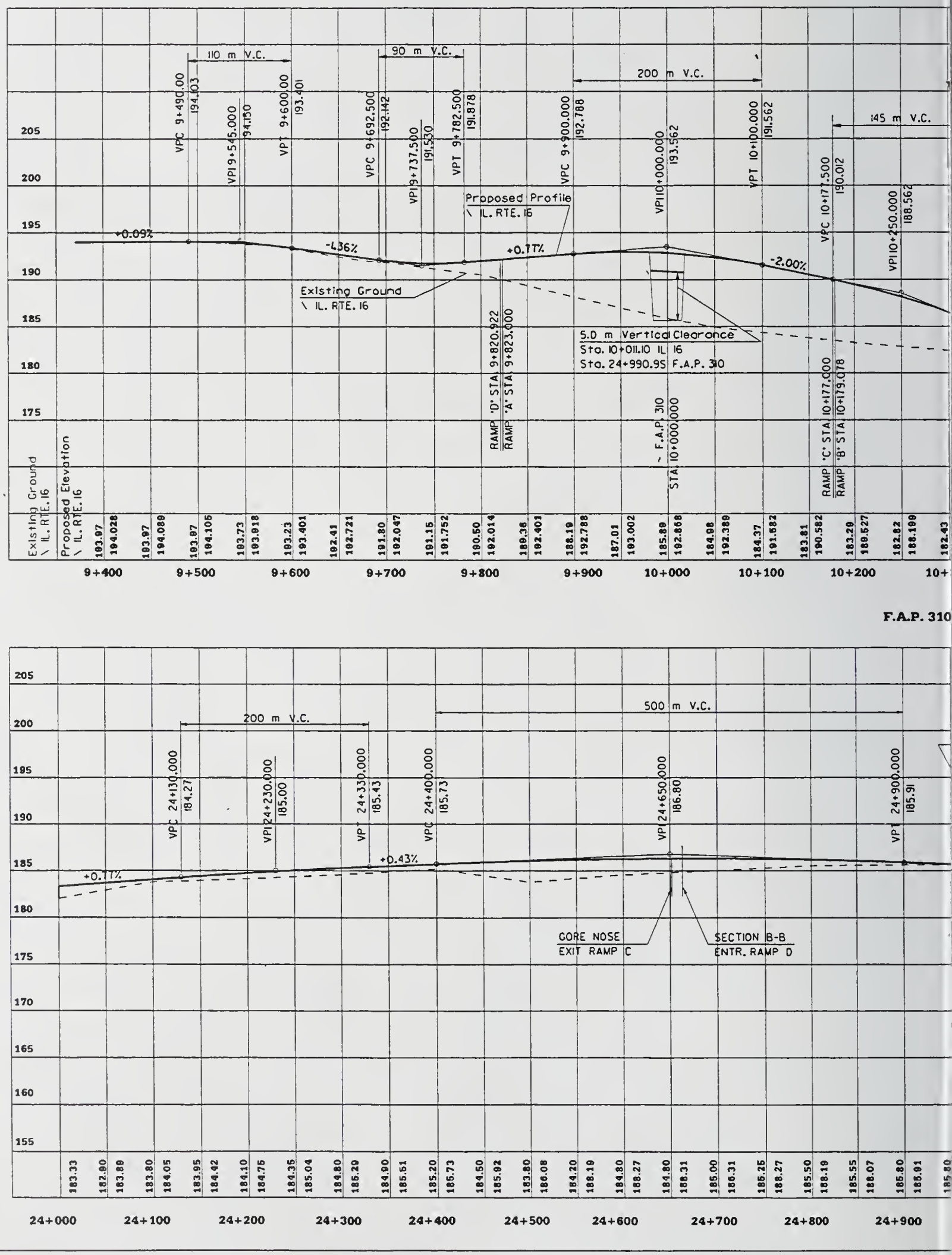
F.A.P. 310 MAINLINE PROFILE

IDS SHEET NO. 3
FIGURE 15-2C

INTERCHANGE DESIGN STUDY
F.A.P. ROUTE 310 (U.S. 67)
F.A.P. ROUTE 325 WITH IL. RTE. 16
SEC. NO 42 PROJ. NO
SCALE 1: 2500 COUNTY JERSEY
INN : I. NO.
SJN : P-93-099-93 REV. NO.
DESIGNED DATE 3/99
SHEET 3 OF 5

EXAMPLE IDS SHEET
(Mainline and Crossroad Profiles)

Figure 15-2C

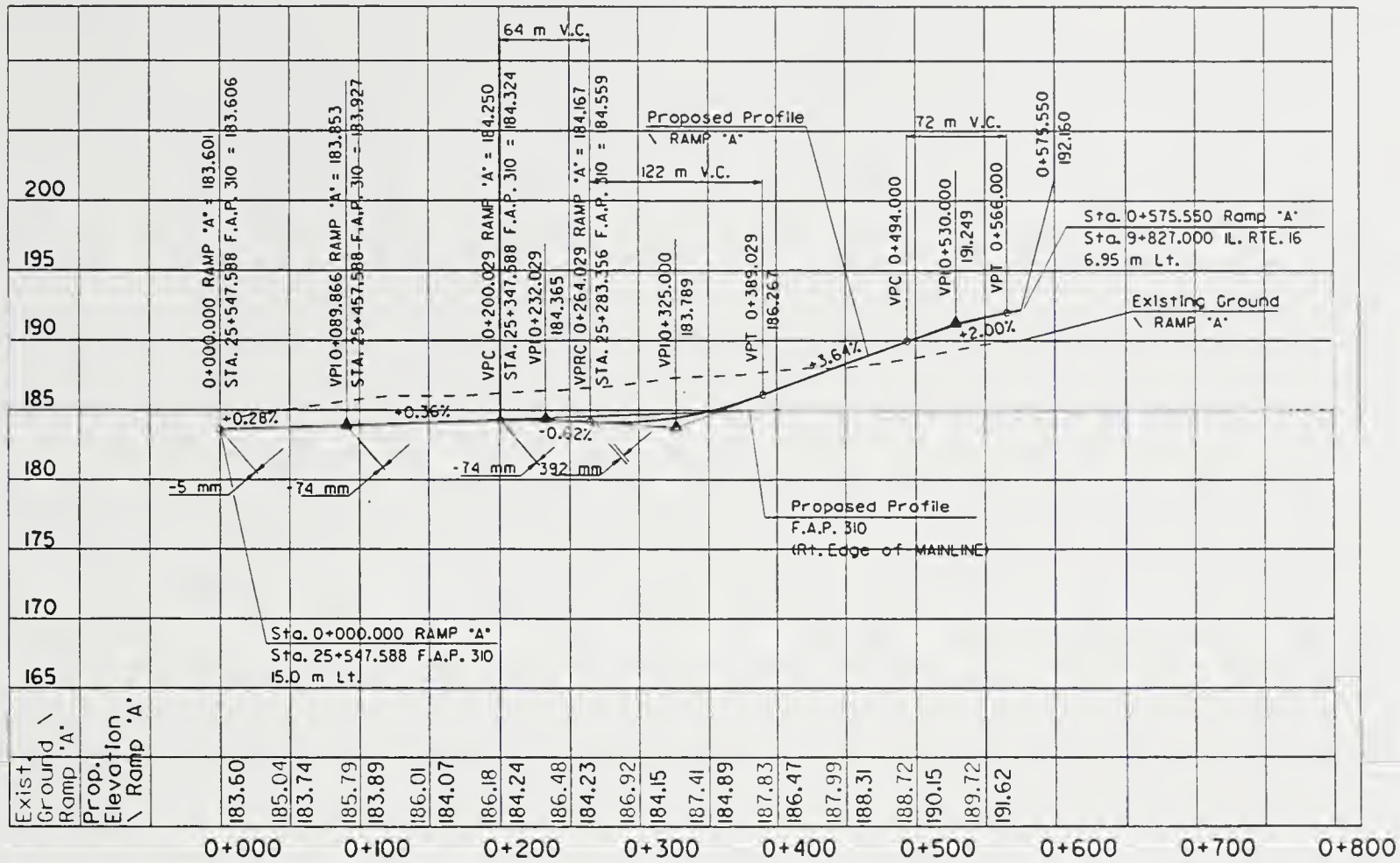


F.A.P. 310

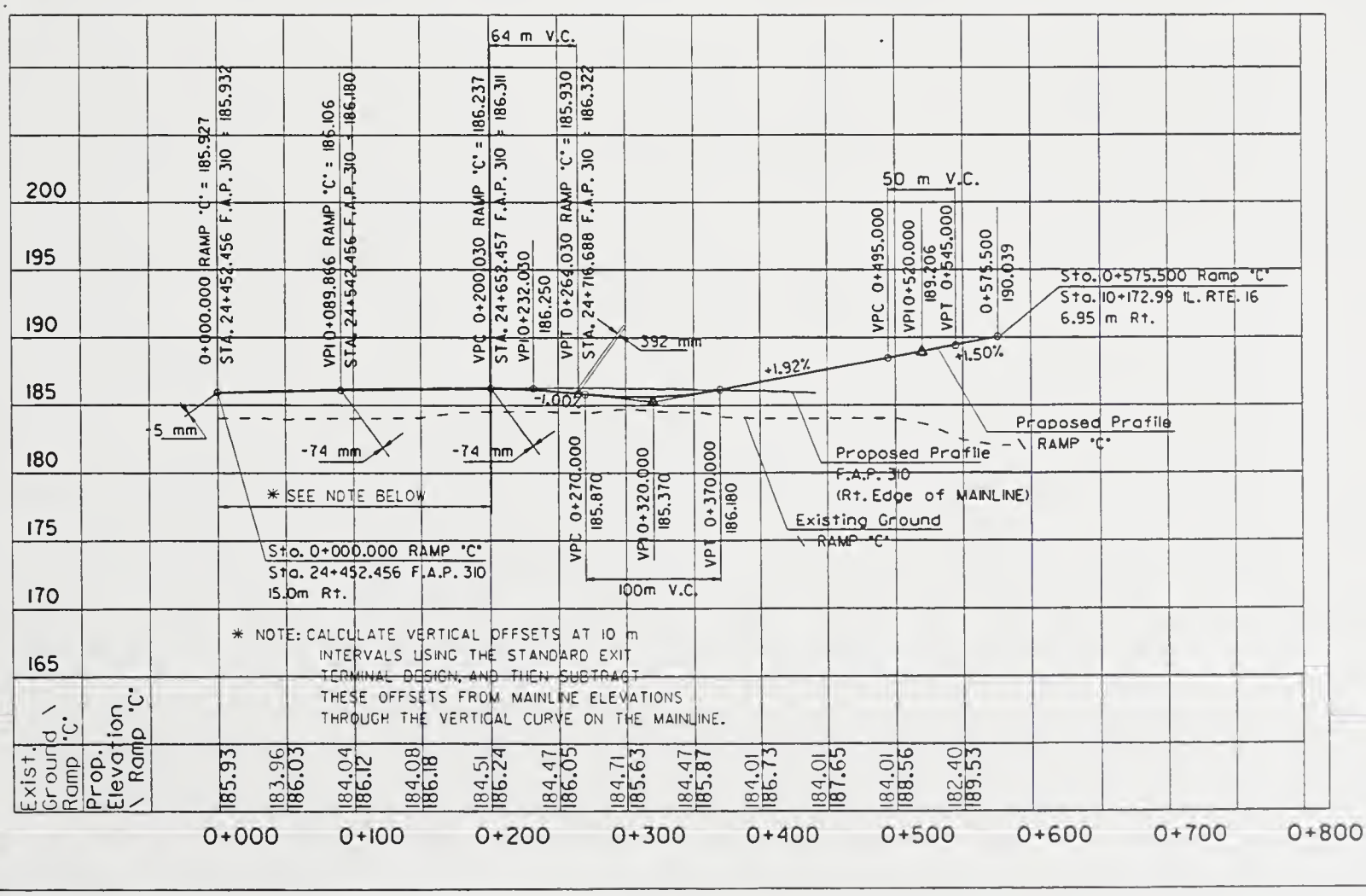
EXAMPLE
(Mainline and Cr

Figure

RAMP "A" EXIT

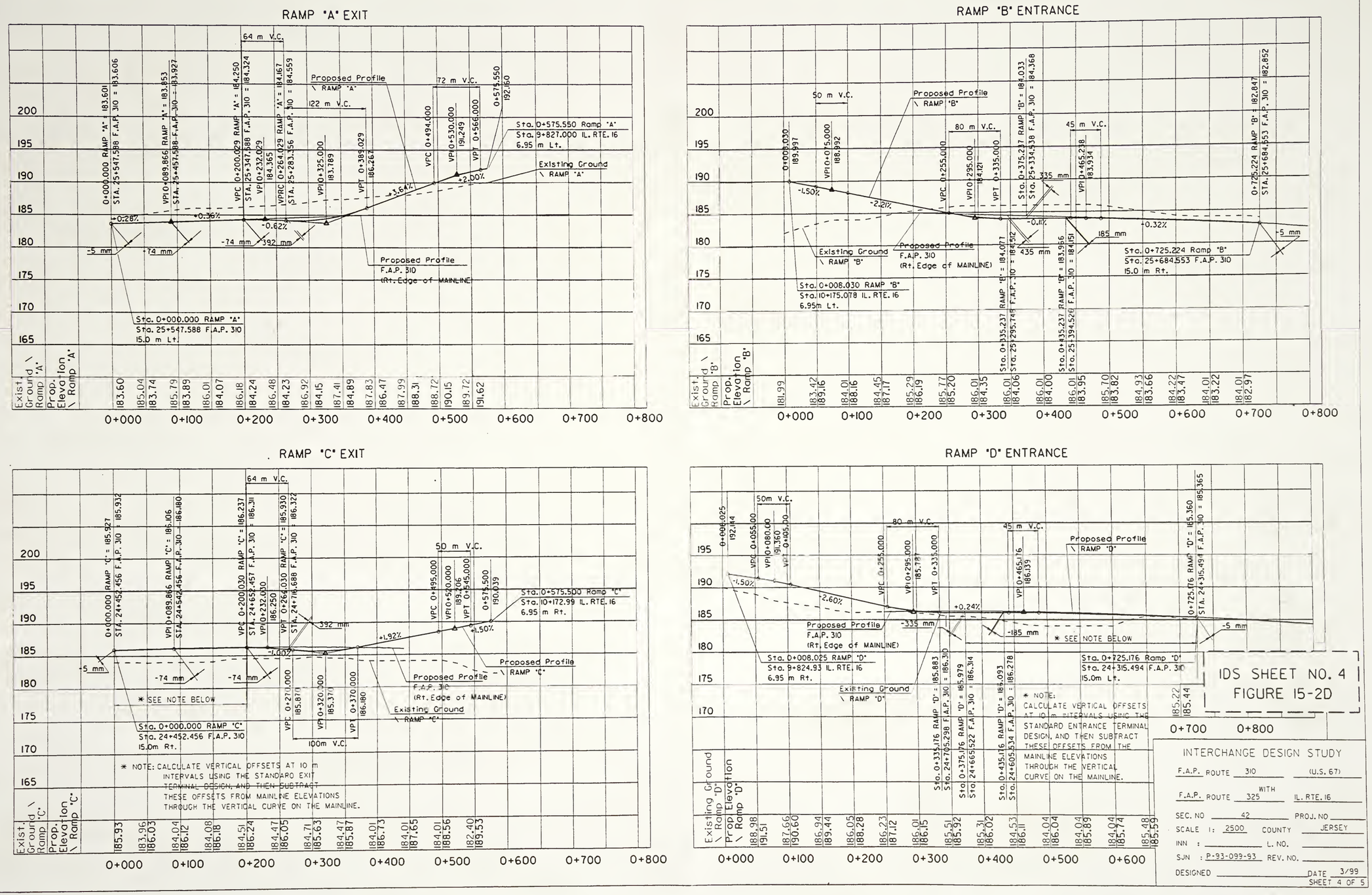


RAMP "C" EXIT



EXAMPLE I
(Ramp P

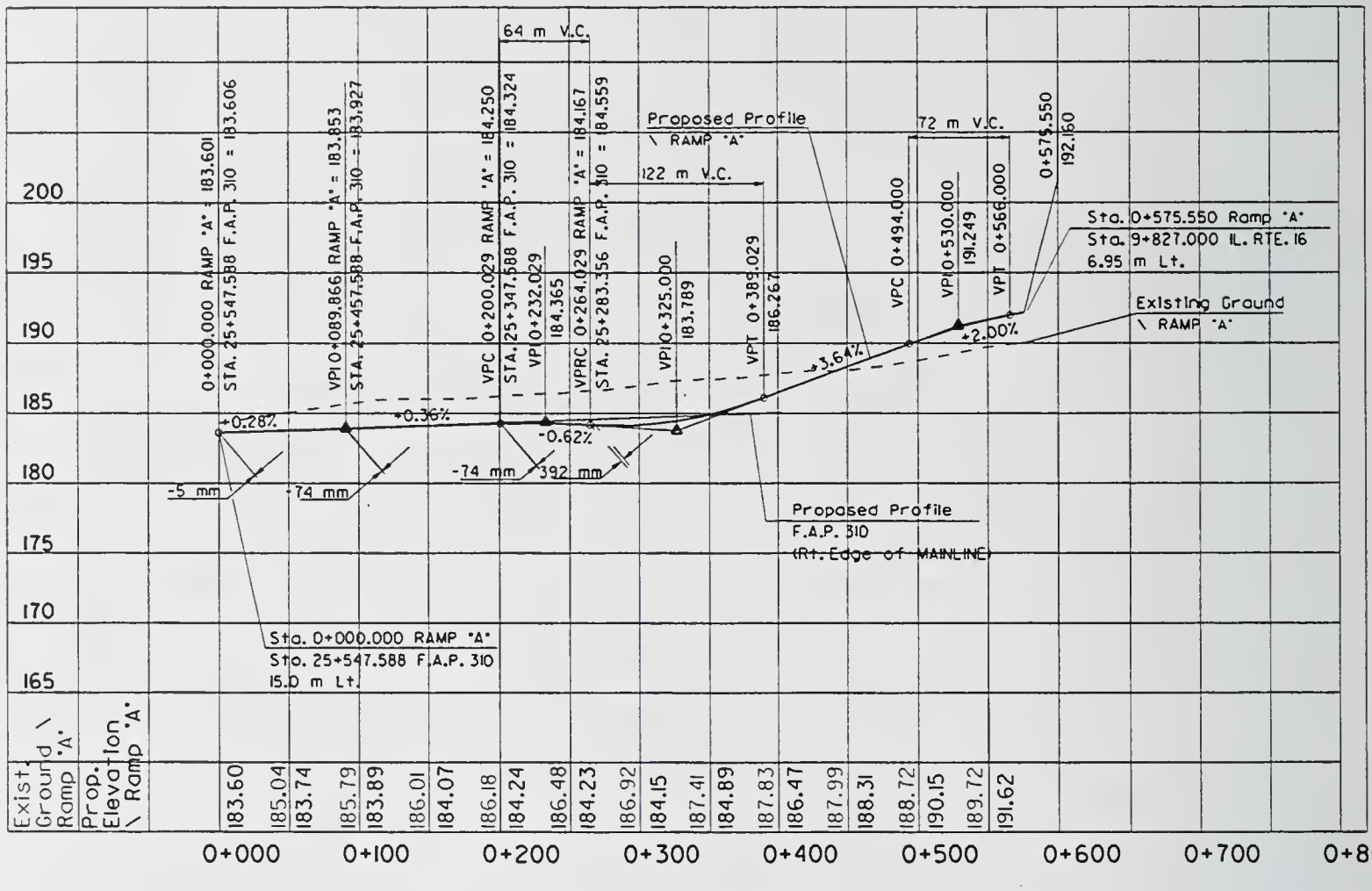
Figure



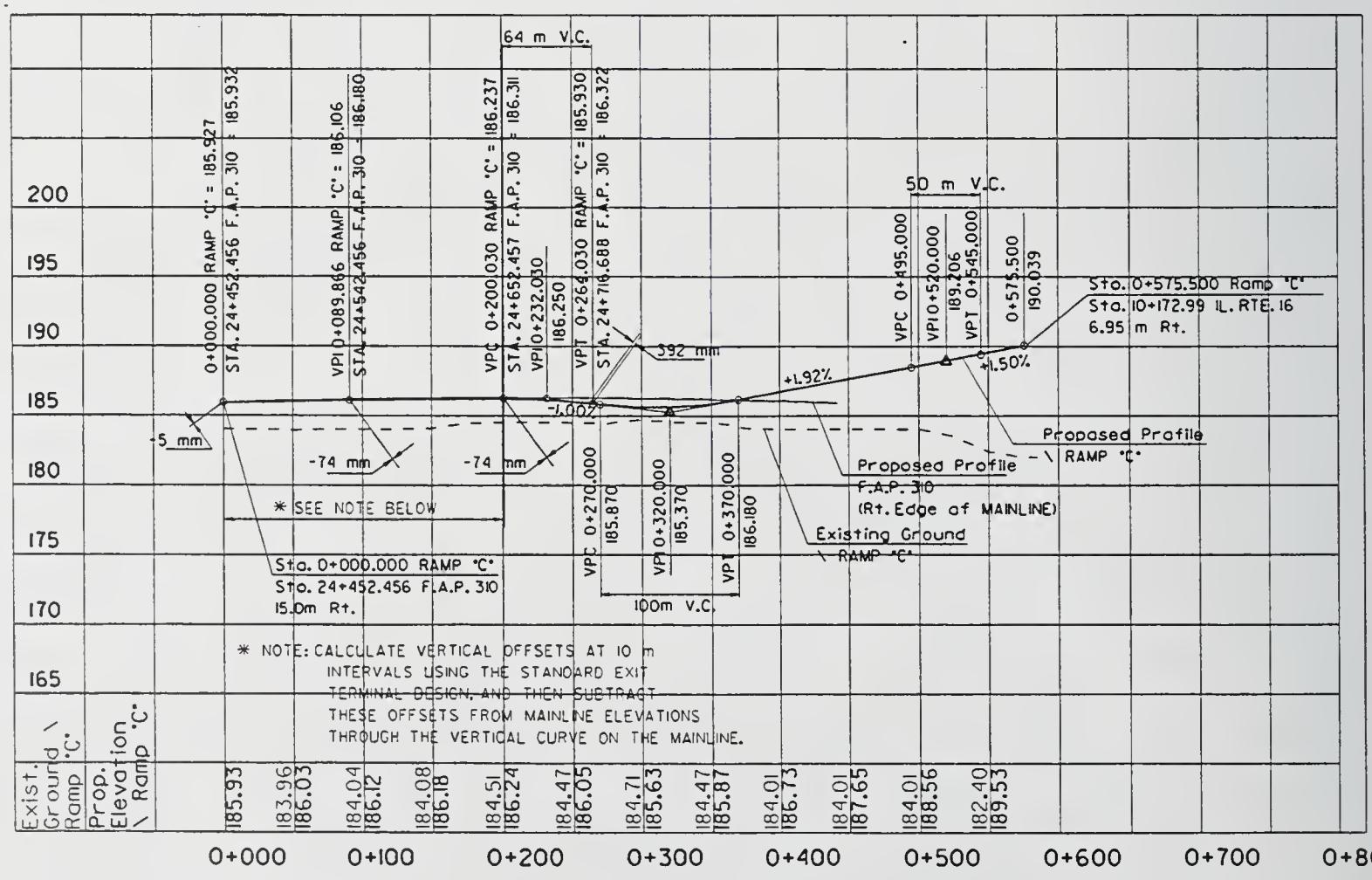
EXAMPLE IDS SHEET
(Ramp Profiles)

Figure 15-2D

RAMP "A" EXIT



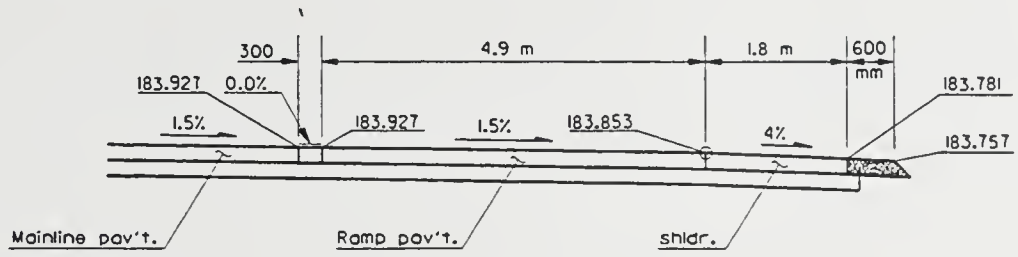
RAMP "C" EXIT



EXAMPLE
(Ramp

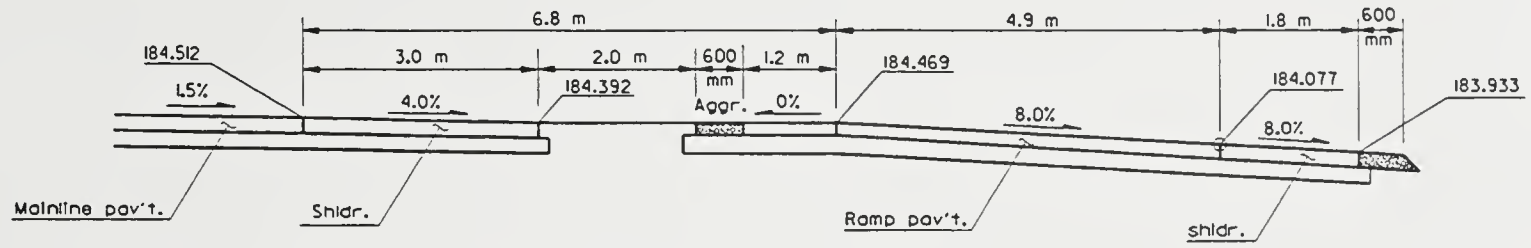
Figure

CROSS SECTION DETAILS A



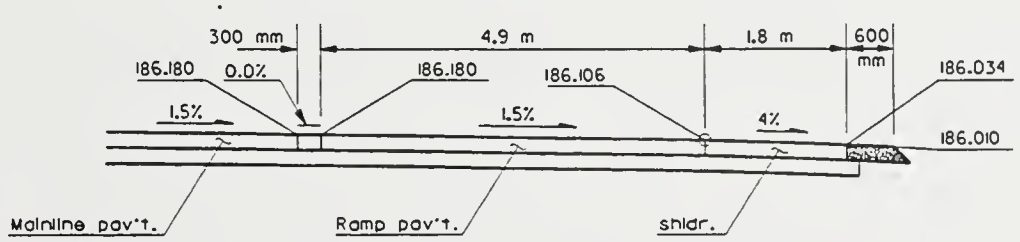
SECTION B-B
STA. 0+089.87

RAMP "A"
EXIT TERMINAL



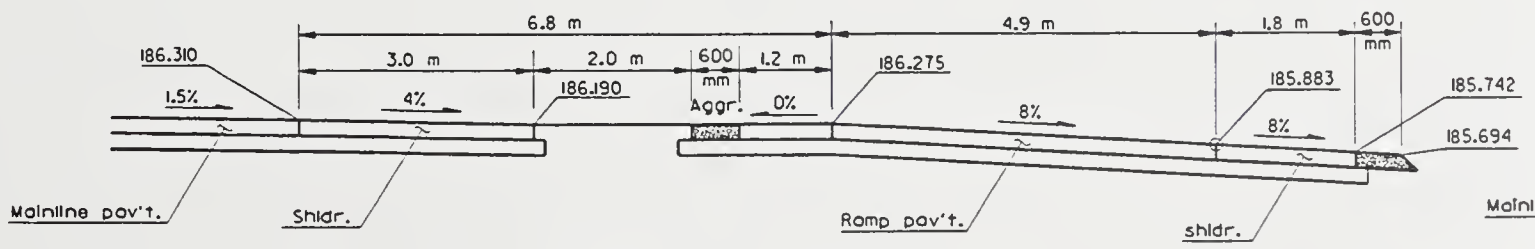
SECTION A-A
STA. 0+335.24

RAMP "B"
ENTRANCE TERMINA



SECTION B-B
STA. 0+089.87

RAMP "C"
EXIT TERMINAL



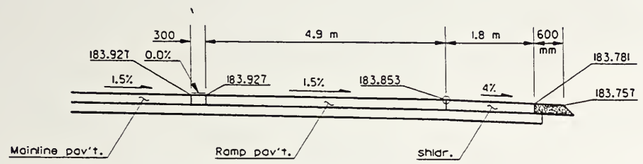
SECTION A-A
STA. 0+335.18

RAMP "D"
ENTRANCE TERM

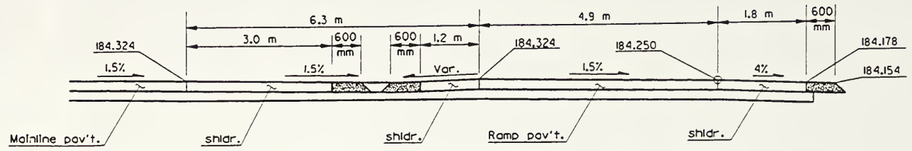
EXAMPLE
(Cross

Figu

CROSS SECTION DETAILS AT RAMP TERMINALS

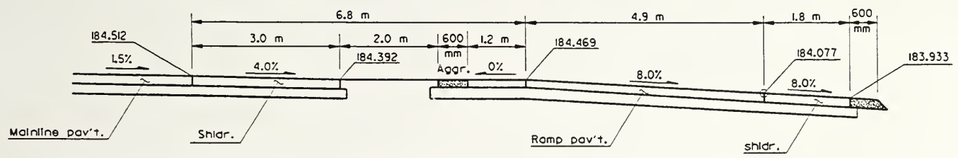


SECTION B-B
STA. 0+089.87



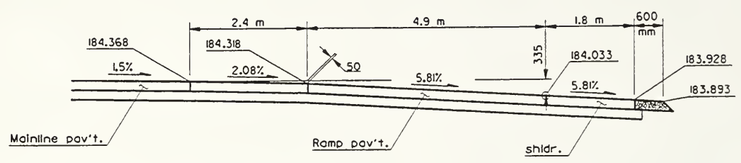
SECTION C-C (Ahead)
STA. 0+200.02

RAMP "A"
EXIT TERMINAL

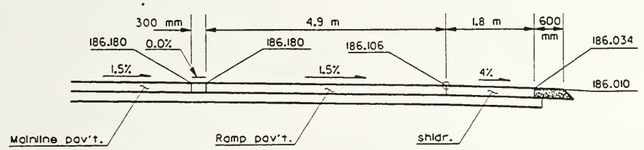


SECTION A-A
STA. 0+335.24

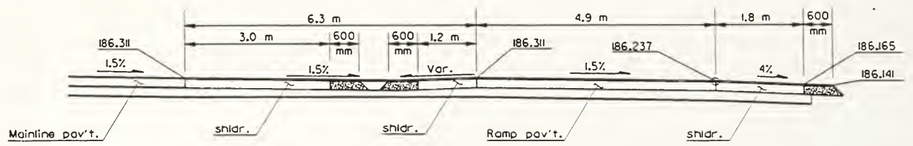
RAMP "B"
ENTRANCE TERMINAL



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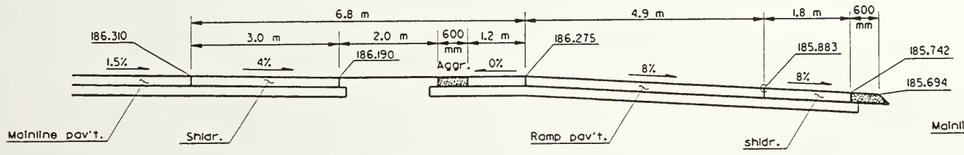


SECTION B-B
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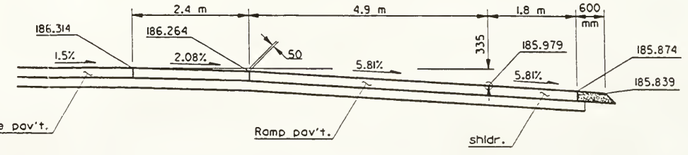
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STA. 0+200.02

RAMP "C"
EXIT TERMINAL



SECTION A-A
STA. 0+335.18

RAMP "D"
ENTRANCE TERMINAL



SECTION B-B
STA. 0+375.18

IDS SHEET NO. 5
FIGURE 15-2E

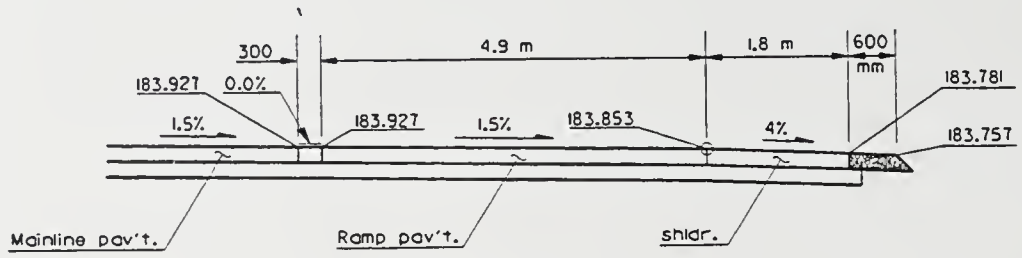
INTERCHANGE DESIGN STUDY

F.A.P. ROUTE 310 (U.S. 67)
WITH
F.A.P. ROUTE 325 IL. RTE. 16
SEC. NO 42 PROJ. NO
SCALE 1: 500 COUNTY JERSEY
INN : L. NO.
SJN : P-93-099-93 REV. NO.
DESIGNED DATE 3/99
SHEET 5 OF 5

EXAMPLE IDS SHEET
(Cross Sections)

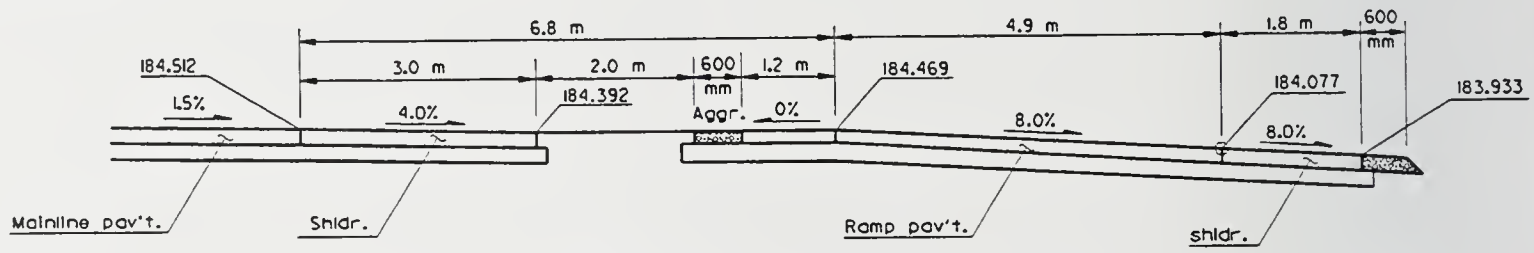
Figure 15-2E

CROSS SECTION DETAILS



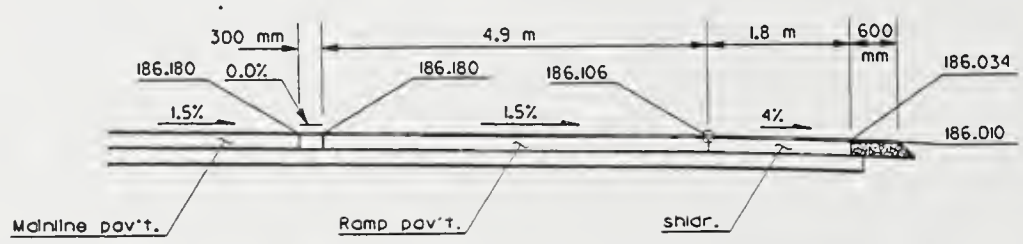
SECTION B-B
STA. 0+089.87

RAMP "A"
EXIT TERMINAL



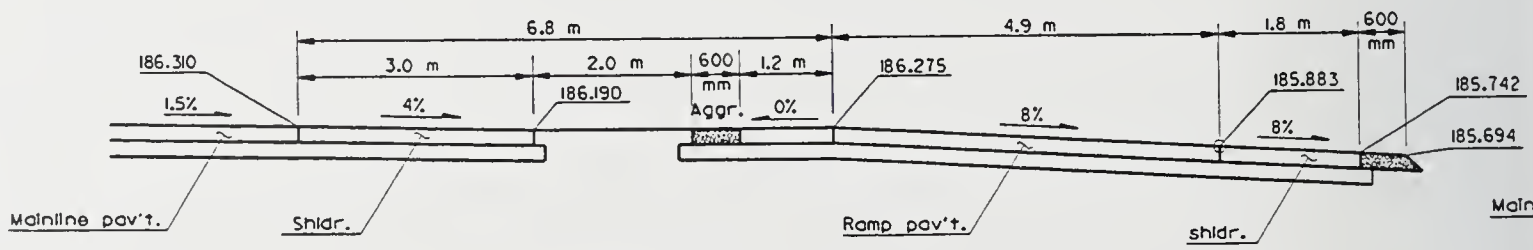
SECTION A-A
STA. 0+335.24

RAMP "B"
ENTRANCE TERMI



SECTION B-B
STA. 0+089.87

RAMP "C"
EXIT TERMIN



SECTION A-A
STA. 0+335.18

Mainline

RAMP "D"
ENTRANCE TE

EXAMP
(Cros

Fig

Ramp Type					
Distance to Adjacent Ramps (ft (m))					
Terrain/Grade					
Freeway Volume	A.M.				
	P.M.				
Ramp Volume	A.M.				
	P.M.				
Truck Types					
% of Trucks on Freeway					
Peak-Hour Factor					
% Trucks on Ramp					
Number of Lanes on Freeway					
Design Speed					
Checkpoint Volume (Freeway + Ramp)	A.M.				
	P.M.				
Density/Speed* (PC/mi/LN)/(mph) (Freeway)	A.M.	/	/	/	/
	P.M.	/	/	/	/
Level of Service (Ramp)	A.M.				
	P.M.				

*Note: *The prediction of density and the model to determine this variable are discussed in the HCM. Density is measured in passenger cars per mile (kilometer) per lane (PC/mi/LN (PC/km/LN)). The average travel speed may be predicted within the ramp influence area, but should not be used as a primary measure of level of service.*

ENTRANCE AND EXIT RAMP TERMINAL CAPACITY TABLE

Figure 15-2F

Weaving Section					
Terrain/Grade					
Type of Weave					
Number of Total Lanes					
Length of Weaving (ft (m))					
Volume 1 (Through Volume)	A.M.				
	P.M.				
Volume 2 (Exit Weave)	A.M.				
	P.M.				
Volume 3 (Entrance Weave)	A.M.				
	P.M.				
Volume 4 (Ramp-Ramp)	A.M.				
	P.M.				
Truck Types					
% Trucks					
% Other Vehicles					
Population Factor					
Level of Service (Weaving Vehicles)	A.M.				
	P.M.				
Level of Service (Non-Weaving Vehicles)	A.M.				
	P.M.				
Weaving Speed	A.M.				
	P.M.				
Non-Weaving Speed	A.M.				
	P.M.				
Constrained/Unconstrained					

TABLE FOR WEAVING ANALYSIS

Figure 15-2G

Chapter Sixteen

REST AREAS
WEIGH STATIONS

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

Chapter Sixteen
REST AREAS/WEIGH STATIONS

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CHAPTER SIXTEEN
REST AREAS/WEIGH STATIONS

16-1 REST AREAS

16-1.01 General

Rest areas are an essential element of the complete highway system. They are provided for the safety and convenience of the traveling public. A rest area provides an oasis for weary travelers to relax and refresh from the rigors of highway travel. A comfort station is provided to accommodate the basic needs of the traveling public. Multi-use land is also provided for picnic tables and limited recreational activities. Rest stops for two-lane highways are discussed in Section 16-1.06

Welcome centers are rest areas located at port-of-entry routes that also provide a full range of amenities. Welcome centers are staffed to provide assistance to travelers regarding directions, lodging arrangements, automotive services, food services, and many other activities. Welcome centers also promote local tourist attractions. Tourist information centers are rest areas that provide amenities similar to welcome centers but are located on interior routes and generally serve a specific tourist area.

16-1.02 Rest Area Task Force Committee (RATFC)

The RATFC is comprised of members of the Division of Highways and directs the rest area program to ensure that the Department's objectives are met. The Committee is co-chaired by the Deputy Director of Operations and Administration and the Deputy Director of Program Development. The responsibilities and Committee objectives are as follows:

1. Bureau of Operations. This Bureau is responsible for maintaining the rest areas, comfort stations, signing, and traffic operations.

2. Bureau of Design and Environment. The BDE is responsible for providing the environmental survey of the site and the geometric design of the rest area.

3. District. One representative from the district will serve on the Committee.

4. Committee. The Committee's responsibilities include:

    - reviewing and evaluating all applicable guidelines, policies, and procedures for the location and design of a rest area facility;

- establishing priority projects and coordinating the construction program; and
- recommending corrective rehabilitation treatments as appropriate.

16-1.03 Departmental Responsibilities

The recommended actions of the RATFC are carried out by the districts, BDE, and Bureau of Operations. Their responsibilities are noted in Figure 16-1A.

16-1.04 Interstate Rest Areas

16-1.04(a) Spacing

Select and acquire the site for the rest area concurrently with the acquisition of the freeway right-of-way. Use a one-hour driving time to determine the average spacing between rest areas. However, many factors influence the final location of the site.

16-1.04(b) Site Selection

Rest areas should be developed as part of a comprehensive program that considers:

- the attractiveness of the location,
- the site's topography,
- the distance from other rest areas,
- the distance between interchanges, and
- the availability of water and utilities.

Consider the following additional information during the site selection process:

1. Needs Assessment. The Rest Area Task Force Committee (RATFC), in cooperation with the district, will make the determination that a rest area is to be constructed within certain limits of a freeway corridor.

2. Site Investigation and Prioritization. Representatives of the Committee and the district will investigate potential sites and prioritize the sites using the form illustrated in Figure 16-1B. Site selection basically considers the scenic quality of the area, access to the area, and the site's adaptability to development including available utilities.

Bureau of Design and Environment	District
• Establish Building/Grounds Policy • Propose Site Locations • Select Rest Area Names • Develop Conceptual Layouts/Review • Prepare Environmental and Design Reports • Request Environmental Surveys • Early Coordination with Outside Agencies • Provide Districts with Reports • Develop Rest Area Geometrics • Preliminary Design Approval • Consultant Selection Rating • Coordinate with Department of Commerce and Community Affairs (DCCA) • Coordinate with the Department of Rehabilitation Services • Coordinate with District on Building Design • Approve Final Design Plans • Coordinate with Capital Development Board for Building Plans • Review and Comment on Construction Plans • Participate in District/Consultant Meetings • Review and Approve Landscape Plans • Develop Site Lighting Plan	• Review Site Locations • Approve Rest Area Names • Review Conceptual Layouts • Hold Public Informational Meetings • Early Coordination with Outside Agencies • Prepare Roadway and Parking Lot Plans • Consultant Selection Rating • Coordinate Consultants on Building Design • Prepare Landscape Plans Including Appurtenances • Review Lighting Plans and Incorporate • Oversee Construction of Project • Coordinate with Bureau of Operations on Maintenance Contracts • Assure Maintenance Compliance to Department Standards • Administer Maintenance Contracts • Monitor Vending and Tourism Operations • Perform or Contract for Repairs

Bureau of Operations
• Establish Building/Grounds Policy • Review Site Locations • Review and Comment on Geometric Designs • Review Roadway and Parking Lot Design • Develop Sign and Striping Policies • Coordinate with District on Signing and Striping Plan • Consultant Selection Rating • Coordinate with District on Building Design • Participate in District/Consultant Meetings & DCCA • Coordinate with Department of Rehabilitative Services on Vending Facilities • Review and Approve Construction Plans • Review and Approve Landscape Plans • Provide Policies and Procedures for Maintenance Operations & Standards • Coordinate with District on Maintenance Contracts • Provide for Testing of Water Plant Sewage Effluents when necessary • Provide for Repairs at Facilities • Conduct Annual Rest Area Evaluation Report

REST AREA TASK FORCE COMMITTEE PARTICIPANTS AND RESPONSIBILITIES

Figure 16-1A

Criteria	Alternatives				
	#1	#2	#3	#4	#5
A. Aesthetics					
1. Fits Topography					
2. View From Interstate					
3. View From Rest Area					
4. Landscaping Potential/Screening					
5. Natural Site Features/Existing Tree Cover					
B. Geometrics					
1. Adequacy Truck/R.V. Parking					
2. Adequacy Car Parking					
3. Expansion Potential					
4. Accessibility					
C. Use Areas					
1. R.V. Picnic Area					
2. Picnic Areas					
3. Sidewalks					
4. Playground					
5. Pet Walks					
6. Security					
D. Land Use Compatibility					
1. Adjacent Farmsteads/Subdivisions					
E. Environmental Control					
1. Hazmat					
2. Water Quality/Wetland					
3. Endangered Species					
4. Archaeology					
5. Air					
6. Noise					
7. Right-of-Way					
F. Distance From Commercial Enterprise					
1. Truck Stops					
G. Utilities					
1. Sewage					
2. Water					
3. Gas					
4. Electric					
H. Cost					
Totals					

Rank 1 -5
1 - Lowest
5 - Highest
N/A - Indicates Not Applicable

EVALUATION CRITERIA FOR SITE SELECTION, LAYOUT, AND DESIGN OF INTERSTATE REST AREAS

Figure 16-1B

3. Residential and Industrial Areas. Desirably, do not locate rest areas near residential or industrial areas.

4. Water and Sewer Needs. As practical, use a municipal service for the facility's water and sewer system. If access to a municipal system is unavailable, provide well water and an on-site waste disposal system. Contact the Illinois Geological Survey for assistance in evaluating the water conditions of a proposed site.

5. Right-of-way Needs. Approximately 25 acres (10 ha) of right-of-way are necessary to accommodate each site.

6. Locations Near Interchanges. Where a rest area is located near a freeway interchange, provide a minimum distance of 3000 ft (1000 m) between the ramp gores of the rest area and the interchange. Provide a greater distance where a rest area ramp is near a major convergence or divergence.

7. Juxtaposition of Rest Areas. Locate rest areas on a freeway so that the rest area approaching on the right precedes the rest area on the opposite side of the freeway and separate them by at least 0.25 miles (400 m). Where rest areas are located closer than the desired distance, consider providing a fence or other physical barrier in the median to restrict crossover pedestrian traffic.

8. Entrance and Exit Ramps. Design rest area entrance and exit ramp terminals according to the typical design criteria used for interchange ramps. See Section 16-1.05(c).

Once a site has been selected, presented to the RATFC, and inspected by representatives of the FHWA for preliminary approval, prepare a Phase I report and submit it to the BDE for obtaining FHWA approval.

16-1.05 Interstate Design

16-1.05(a) Vehicle Capture Rates

National studies indicate that approximately 10% of the total Average Daily Traffic (ADT) will enter a rest area. A study conducted by the Department concluded that 9% of passenger cars and 15% of trucks in the approaching traffic stream will enter a rest area. The criteria for estimating the number and type of vehicles that will enter a rest area based on the Average Daily Traffic (ADT) is illustrated in Figure 16-1C. The criteria for determining the number of persons projected to use the rest area, the anticipated demand for water, and the type of rest room facilities that should be provided are illustrated in Figure 16-1D.

Route _____ Rest Area _____ NSEW-Bound

County_____ Analyst _____ Date _____

Two-Way ADT _____ (Current/Projected) Year _____

x 0.60 Directional Distribution (1 Way ADT) _____

x 0.11 Design Hourly Volume (30th Max. Hr.) DHV [ ]

Parking Requirements	
Trucks	**Passenger Cars**
% Trucks ____ x DHV = _____ x 0.15 Entering Veh. = _____ x 0.50 Dwell Time/Turnover [ ] Min. Required Truck Stalls (One Side Only)	% P. Cars _____ x DHV = _____ x 0.09 Entering Veh. = _____ x 0.34 Dwell Time/Turnover [ ] Min. Required P. Car Stalls (One Side Only)*

Notes:

**1. Passenger car stall requirements should be increased 25% for welcome centers.*
2. Provide one (1) handicap stall per 25 passenger cars in the passenger car parking area.
3. Provide one (1) handicap stall per 25 trucks in the truck parking area.
4. See Section 16-1.05(d) for maximum number of vehicle parking stalls.

Picnic Tables	Litter Receptacles
DHV x 0.008 = [ ] (Generally, 33% are sheltered.)	DHV x 0.0008 = [ ]

Determination of Design Guidelines for Rest Area Parking Requirements

- Enter with two-way **ADT** for current or projected year.
- **Directional Distribution** — A 60/40 distribution is a typical split on the Interstate highway system.
- **Design Hourly Volume** — The DHV represents the 30th maximum hourly volume of the year (30 HV). In this case, it represents the vehicles on the mainline that approach a rest area in one hour. Typical conversion of ADT to DHV on the Illinois Interstate system is 11% as indicated in *Traffic Characteristics on Illinois Highways — Bi-Annual Report OPP.*
- **Trucks/Cars as % of Traffic** — Enter actual truck and passenger car percentages of the appropriate highway section and multiply by the DHV.
- **Percent of Entering Vehicles** — Typically, 15% of the trucks and 9% of the passenger cars enter the rest area.
- **Dwell Time** — Assume a dwell time of 15 minutes for trucks and 10 minutes for passenger cars. A factor of 2 is used to convert to 30 minutes (0.50 hour) for trucks and 20 minutes (0.34 hour) for passenger cars.

DESIGN GUIDELINES FOR INTERSTATE REST AREA PARKING REQUIREMENTS

Figure 16-1C

Route _____ Rest Area _____ Date _____

County _____ Analyst _____

Two-Way ADT _____ (Current/Projected) Year _____

	x	0.60	Directional Distribution (One-Way ADT)		_____
	x	0.11	Design Hour Volume (30th Max. Hr.)		_____
	x	0.10	Vehicles Entering Rest Area Per Hr.		_____
	x	2.0	Average Vehicle Occupancy		_____
	x	0.85	Persons/Rest Room Usage =	**P/RU**	_____
	÷	60	Persons Per Minute		_____
*	x	2.5	Gallons (9.5L) Per Person =	**GPM (LPM)**	[ ]
	x	60	Gallons (Liters) Per Hour =	**GPH (LPH)**	[ ]
	x	12	Gallons (Liters) Per Day =	**GPH (LPD)**	[ ]

(One Side Only)

Notes:

**1. Ensure that the momentary peak flow rate (GPM (LPM)) is twice the design flow rate or the total toilets and urinals times 5 GPM (19 LPM), whichever is less for a period of two hours.*

2. Check water supply systems to determine the impact of momentary peaks.

3. Provide design usage at a pressure of 40 psi (275 kPa).

Rest Room Amenities							
P/RU	**Men**				**Women**		
	Urinals	Toilets	W. Basins	H. Dryers	Toilets	W. Basins	H. Dryers
<250	4	2	2	2	6	2	2
>250	4	4	4	4	8	4	4
>500	6	4	4	6	10	4	6

Note: Values may be adjusted for site specific percentages.

DESIGN GUIDELINES FOR INTERSTATE REST AREA USAGE AND WATER NEEDS

Figure 16-1D

- Enter with **Two-Way ADT** for current or projected year.

- **Directional Distribution** — Use a 60/40 distribution, which is a typical split on the Interstate highway system.

- **Design Hourly Volume** — The DHV represents the 30th highest hourly volume of the year (30 HV). In this case, it represents the vehicles on the mainline that approach a rest area in one hour. Typical conversion of ADT to DHV on the Illinois Interstate system is 11% as indicated in *Traffic Characteristics on Illinois Highways — Bi-Annual Report OPP*.

- **Vehicles Entering Rest Area** — Typically, 15% of the trucks and 9% of the passenger cars will enter the rest area. Using a typical Interstate truck percentage of 28% and 72% for passenger cars, the capture rate of passing vehicles is a weighted average of 10%. On Interstate routes where the truck percentage is 45%, the weighted average is 16%. Various truck percentages can be interpolated to determine the weighted average.

- **Vehicle Occupancy** — Vehicle occupancy is determined to be 1.83 persons per vehicle; however, the weekend rate is 2.3. Use a weighted average of 2.0 for these calculations.

- **Persons/Rest Room Usage** — 85% of the people entering a rest area utilize the rest rooms. A slightly higher percentage of men use the rest rooms than women but the difference is not significant to warrant any difference in rest room conveniences.

- **Water Usage** — Use a value of 2.5 gallons (9.5 L) per person to determine the peak gallons (L) per minute rate (based on low-volume flush toilets and urinals).

- **Water Usage Per Day** — The multiplier of 12 is based on GPH (gallon per hour) (LPH, liters per hour) rate for two hours per day, 80% of GPH occurring for eight hours and 25% of GPH occurring for 14 hours. Hence, GPD = (GPH) (2) + (0.8 GPH) (8) + (0.25 GPH) (14) = 11.9 round to 12.

- Use the **P/RU** value in the table to determine the desirable rest room amenities.

DESIGN GUIDELINES FOR INTERSTATE REST AREA USAGE AND WATER NEEDS

Figure 16-1D
(Continued)

16-1.05(b) Design Elements

Consider the following guidelines during the design of rest areas:

1. Buffer Zone. To enhance patron safety, locate the facility a minimum distance of 100 ft (30 m) away from the freeway to create a buffer zone to the nearest use area.

2. Parking. See Section 16-1.05(d) for information on vehicle parking requirements.

3. Internal Roadways. Design internal rest area roadways for a minimum speed of 20 mph (30 km/h) and a desirable speed of 25 mph (40 km/h).

4. Curbing. Curbing may be used on internal roadways to restrict illegal parking on the shoulder and to minimize vehicular encroachment.

5. Fencing. Fence the rest area right-of-way to prevent access to or from adjacent properties.

16-1.05(c) Entrance and Exit Ramp Terminals

Provide access to and from rest areas according to the typical ramp terminal designs presented in Chapter 37 and the *Highway Standards*. Also consider the following additional information on entrance and exit ramp terminals:

1. Exit Ramps. Design initial ramp curves for 50 mph (80 km/h) and limit superelevation to 6% maximum. Provide decision sight distance for the exit maneuver. Provide a deceleration distance of 600 ft (180 m) from the gore of the exit ramp to the car/truck divergence gore.

2. Entrance Ramps. Provide a minimum distance of 1200 ft (350 m) from the truck parking area to the gore nose on the entrance ramp. This distance typically will allow a truck to accelerate to an acceptable speed before entering the freeway. Adjust the acceleration distance where the ramp terminal is on a grade greater than 3% or where the freeway level of service is adversely affected by the truck's merging speed. See Section 37-6.02 for additional guidance.

16-1.05(d) Vehicle Parking Requirements

The annual growth of traffic on the Interstate highway system has created the demand to increase vehicle parking requirements for new and rehabilitated rest areas. The Rest Area Task Force Committee (RATFC) has established that a facility should be maximized at 50 passenger car stalls and 40 truck stalls. Where site conditions restrict full compliance of the maximum requirements, apply the values obtained from Figure 16-1C.

See Figures 16-1E and 16-1F for typical design layouts. Chapter 37 provides additional criteria. Typically, truck parking areas are located to the rear of a site. An exception to this would be if the terrain or a scenic vista would be better served if passenger cars were located at the rear of a site. Within the car parking area, the through roadway width of 20 ft (6.0 m) is desired with diagonal parking generally on both sides of the roadway. Provide B-6.18 (B-15.45) curb and gutter within the vehicle parking area.

The truck parking area should typically provide a center aisle 30 ft (9.2 m) wide with 45 degree diagonal parking on both sides; however, 35 degree may be used in confined areas. See Figure 16-1G for an example of the typical stall dimensions. Design exit aisles to be 28 ft (8.6 m) in width, minimum, with an adjacent B-9.18 (B-22.45) curb and gutter. Desirably, place an island in the truck parking area near the center walkway to the comfort station. This island may contain a telephone Kiosk and picnic tables. Design ramp widths and roadway geometry to accommodate a WB-65 (WB-20) design vehicle assuming the Case I condition. Ramp widths are normally 16 ft (4.9 m) wide; however, increase this width to accommodate truck off-tracking when providing a curved alignment. See Section 36-2.03 for turning roadway widths that are also applicable to rest areas.

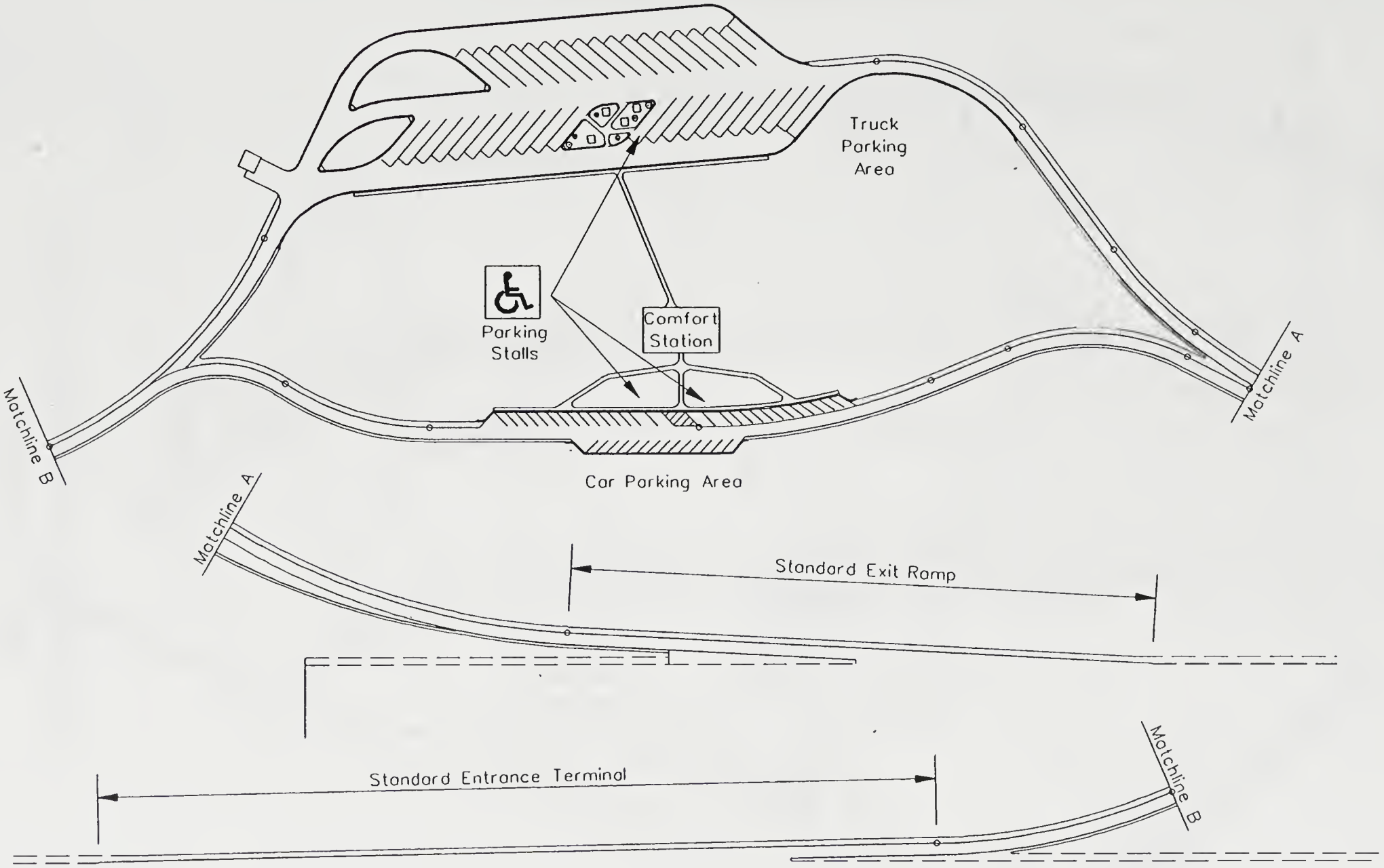
16-1.05(e) Pavement/Shoulder Design

Design the rest area exit and entrance ramps, roadways, shoulders, and parking areas according to Section 54-1.07. The concentration of heavy trucks braking on the ramps and inner roadways and the sharp turning maneuvers to enter parking stalls requires these facilities to be considered "high stress" locations. See Chapter 54 for guidelines on "high stress" pavement designs.

Figure 16-1H illustrates a typical ramp cross section with 1V:4H side slopes and pipe underdrains. In areas where curbing is desired to restrict trucks from parking on the shoulder, use a B-9.24 (B-22.60) curb and gutter. For truck parking areas, use a B-6.18 (B-22.45) curb and gutter with a 1 ft (300 mm) wide curb top. For car parking areas, use a B-6.18 (B-15.45) curb and gutter. Ramp all island noses for safety and ease of maintenance.

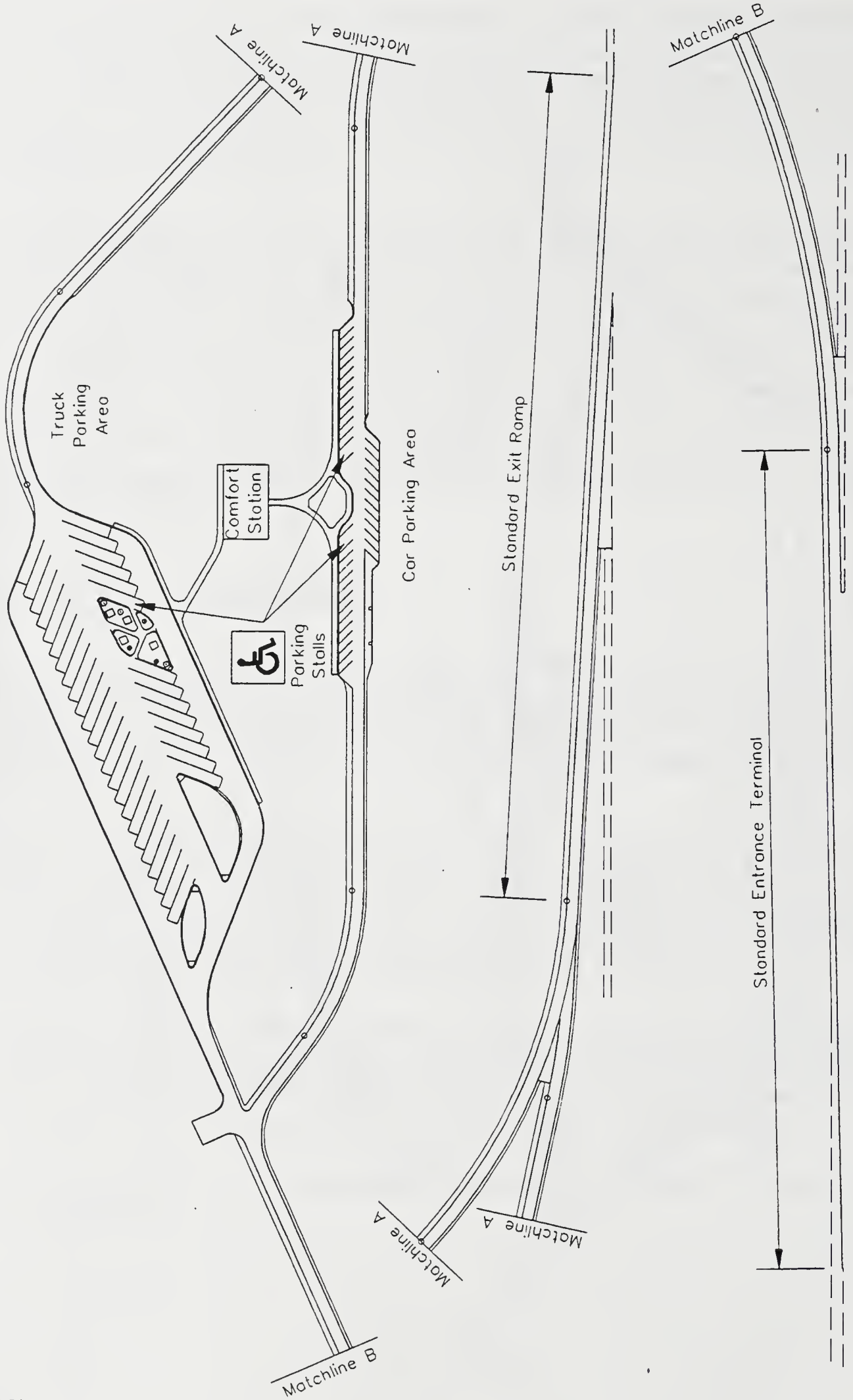
Because of the likelihood of vehicle off-tracking onto ramp shoulders, provide fully paved 8 ft (2.4 m) wide shoulders on the right and fully paved 4 ft (1.2 m) wide shoulders on the left. The transition (i.e., intersection of paved shoulders) between the rest area shoulder design and the freeway shoulder design will occur near the 1 ft (300 mm) stub of the ramp tapers.

Design ramp elements (e.g., superelevation, superelevation transitions, crossover crown) as indicated in Chapter 37.



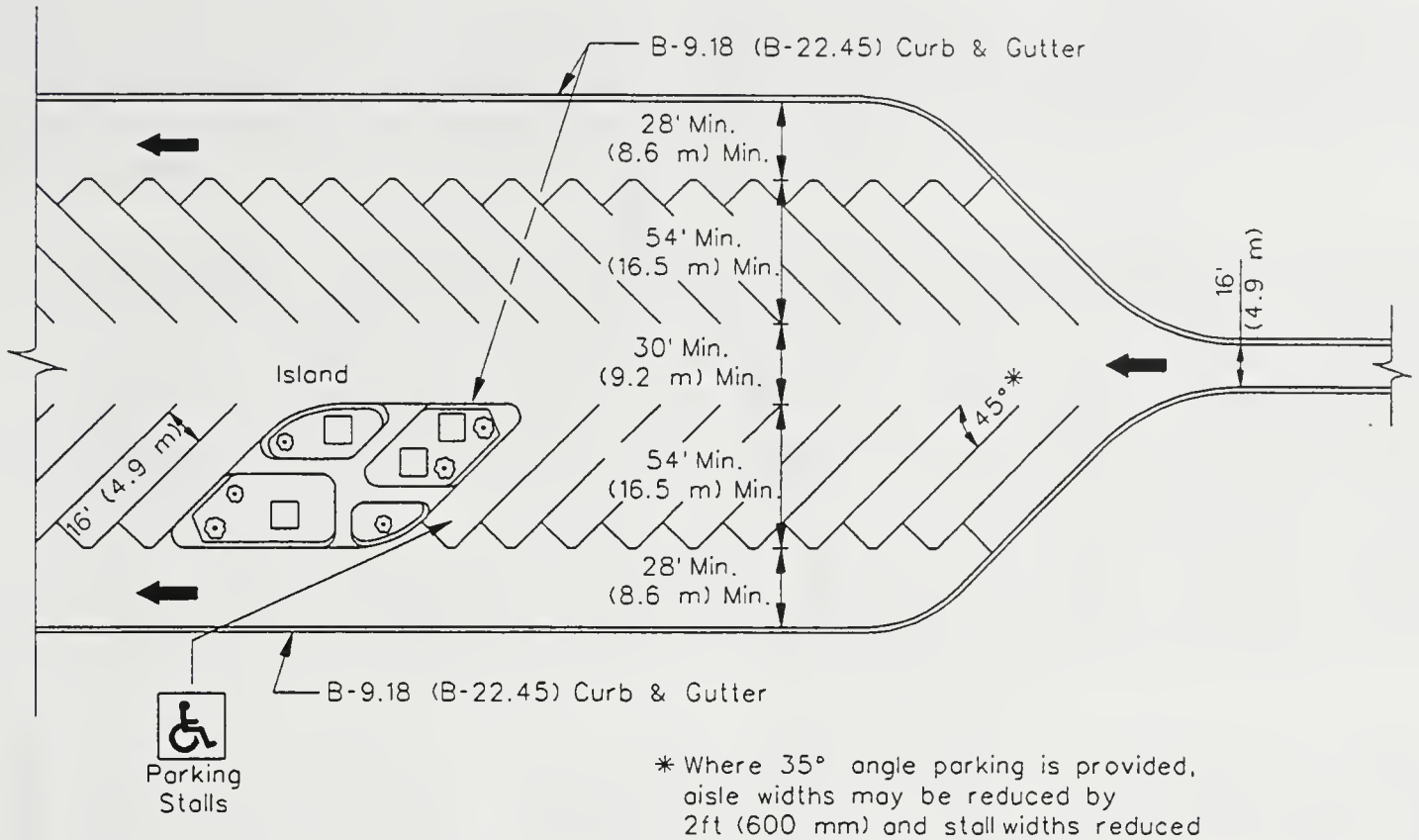
TYPICAL REST AREA DESIGN LAYOUT

Figure 16-1E



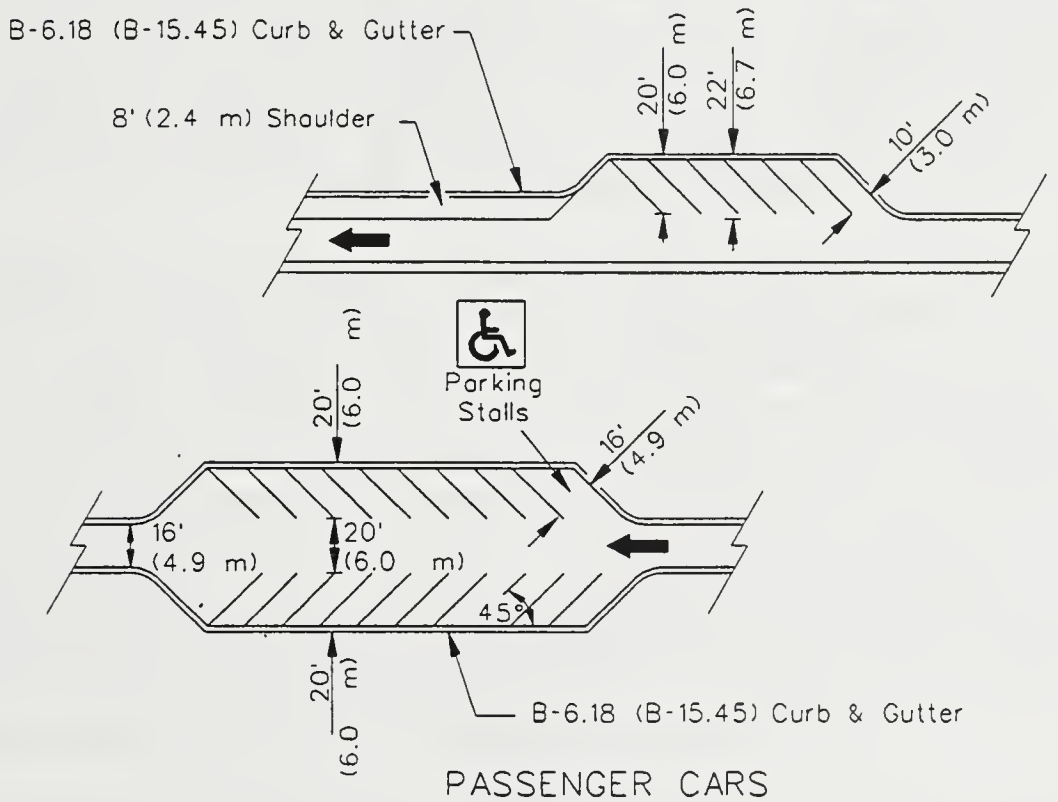
TYPICAL REST AREA DESIGN LAYOUT

Figure 16-1F



* Where 35° angle parking is provided, aisle widths may be reduced by 2ft (600 mm) and stall widths reduced by 1ft (300 mm).

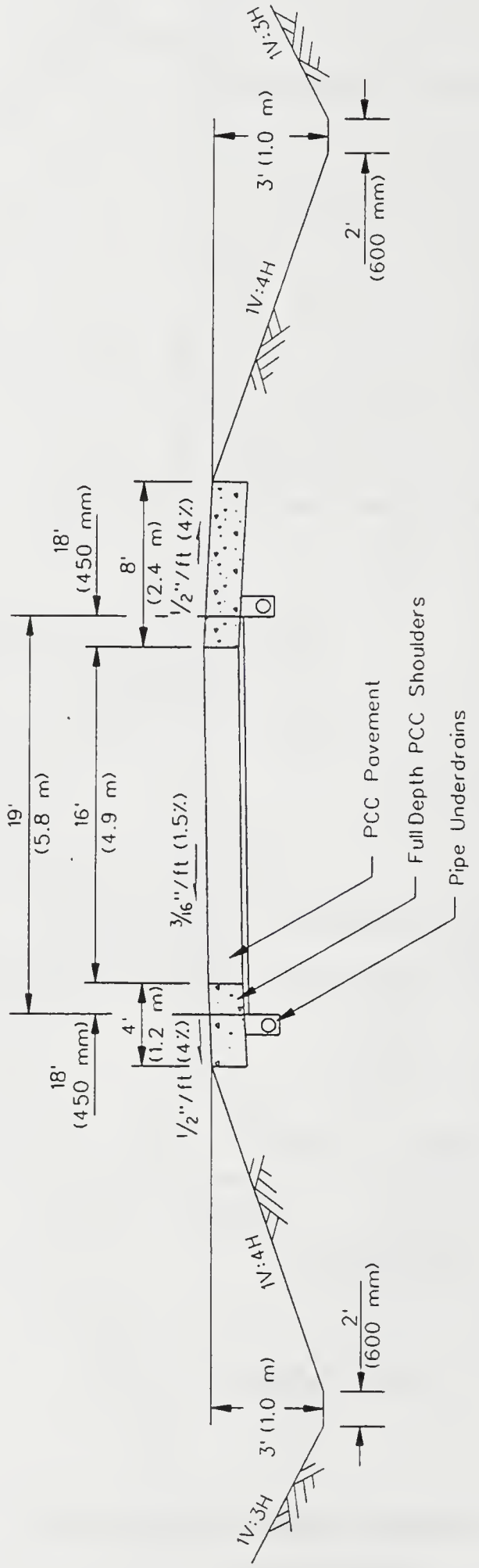
TRUCKS



PASSENGER CARS

TYPICAL PARKING AREA CONFIGURATION

Figure 16-1G



RAMP CROSS SECTION
(Rest Areas)
Figure 16-1H

16-1.05(f) Other Amenities

The multi-use area provides a restful environment for the traveler and also allows some limited recreational activities. Many facilities offer a scenic vista to the adjacent landscape as well as access to lakes, creeks, and wooded areas. Use the following guidelines to provide the most desirable elements of a rest area facility:

1. Picnic Tables. Use Figure 16-1C to determine the desired number of picnic tables. Generally, ensure that 33% of the tables are sheltered with an appropriate number being wheelchair accessible. Sheltered tables would not be required where an adequate number of trees would provide some shade for picnic tables. Sidewalks should interconnect approximately 50% of the picnic tables, particularly those tables that are wheelchair accessible. The design of the shelters should be compatible with the design of the comfort station. Generally, lighting in the shelters is not required, but certain locations may warrant some illumination. Anchor picnic tables to concrete pads to prevent vandalism. Where appropriate, place tables on parking lot islands or on the backside of truck parking areas.

2. Lighting. The lighting of a rest area is accomplished by a combination of high-mast lighting and pole lights. Pole lights that are 45 ft (13.5 m) high with 250 watt, high-pressure sodium illuminaires are most appropriate to illuminate entrance and exit terminals as well as ramps leading to and from the parking areas. The high-mast lighting is normally applicable to parking and multi-use areas with poles of 100 ft (30 m) in height. Where practical, provide flagpole lighting with fixtures mounted above ground in inconspicuous locations. Recess all lights on the sides of buildings with screen covers to prevent bird nesting. Prepare lighting plans according to the criteria in Chapter 56. Design all light poles to be of a non-breakaway design. See Section 38-4.12.

3. Sidewalks. Place sidewalks adjacent to all curb parking areas and design them to comply with accessibility requirements. Entrance walks to the comfort station should provide direct access from the parking area and should not be obstructed by signing, bench seating, or planting areas. Accessories such as drinking fountains, signing, newspaper containers, and recycling receptacles should be positioned adjacent to the sidewalk and anchored to concrete pads. Other than the main entrance to the comfort station, sidewalks should be 5 ft (1.5 m) wide and constructed of concrete with a slip resistant surface. Do not include wood slats at expansion construction joints. Other recreational walkways may be constructed with loose gravel, shredded bark, or similar loose material, to allow extended walks to other natural areas of the facility.. Provide nature trails where site conditions warrant such amenities.

4. Playground. Provide a children's playground in a convenient location that attracts its use but does not impede access to the comfort station. Locate the playground area as near to the car parking area as practical but a sufficient distance away to enhance the safety of playing children. A general size of 30 ft x 40 ft (9 m x 12 m) provides an acceptable

area to install a variety of playground equipment. The area should have a fixed border to retain the surface material. Ensure that the playground meets accessibility requirements and includes a sufficient number of play equipment to accommodate the needs of disabled children.

5. Pet Walk. Provide a pet walk area at all rest area facilities. The location should be a designated area of unmowed grass or underbrush that is a sufficient distance from any activity area. Place signing near the front entrance to direct pet owners to the designated area. Determine the size and location of the pet area by site restrictions and conditions.

16-1.05(g) Comfort Station

Entranceways to comfort stations should provide an unobstructed walkway to the facility as well as a clear view into the lobby area. Elevated planters, walls, shrubs, and bushes should not obscure the view of the approaching patron. The open view also allows the State police to scan the lobby in a drive-by surveillance. In general, a comfort station requires approximately 3000 ft^2 (280 m^2) of floor space to accommodate the necessary conveniences to meet the needs of the traveling public. The following provides additional information on the design of comfort stations:

1. Vestibule. The entryway should be a glass enclosure that provides an unobstructed view into the lobby. Use double air-lock doors with high-quality latches and closure hardware.

2. Lobby. The lobby area should provide 800 ft^2 to 1000 ft^2 (75 m^2 to 93 m^2) of floor space with a generous amount of windows to maximize natural light. Windows will be provided with safety glass and sectioned in 4 ft (1.2 m) increments or less for ease of repair and maintenance. Protect full-length windows on the inside by placement of handrails and/or bench seating. Locate water fountains away from the windows to prevent splashing. Recessed lighting with vandal-proof flush lenses is desirable. Design emergency lighting to be flush with the ceiling.

3. Vending Area. Locate the vending area to the side of the lobby and provide space for a minimum of six machines. Bench seating is desirable in this area. A security camera should be installed to monitor the vending area. Also, provide a cold-water hose bib for the vending machines.

4. Wall Space for Information Boards. All rest area facilities will display a large 4 ft x 6 ft (1.2 m x 1.8 m) State map in a prominent location on either a wall or a center kiosk. Additional wall space of approximately 30 ft^2 (3 m^2) is necessary for information services and notices. Welcome/tourist information centers require additional space for brochures to promote Statewide and local attractions.

5. Telephones. Telephone service is required at all rest area facilities. Provide a minimum of two telephones in the comfort station lobby for public use, one of which meets accessibility requirements. TTY telephones (i.e., teletypewriters for the deaf) may be provided in selected facilities in coordination with Central Management Services (CMS). Additionally, one phone is required in the mechanical room and, where a welcome center is provided, one phone is required for the Department of Commerce and Community Affairs (DCCA) attendants. Provide remote ringers in the lobby and outdoors for the mechanical room phone. On the exterior, provide at least two or three phones. Generally, a shell protector is provided for each exterior phone, or they may be mounted in a sheltered kiosk. Typically, place exterior phones adjacent to the center sidewalk. Where an island is provided in the truck parking area, a telephone kiosk also may be provided for truck drivers' use.

6. Vending Storage Room. The vending storage room should be located near the vending area with internal and external access doors. The room should be approximately 225 ft^2 (21 m^2). Provide a 5 lb (2.26 kg) ABC fire extinguisher in the storage room. Also, provide double duplex receptacles and telephone outlet at the proposed location of a desk. Provide hose bibs in the storage area.

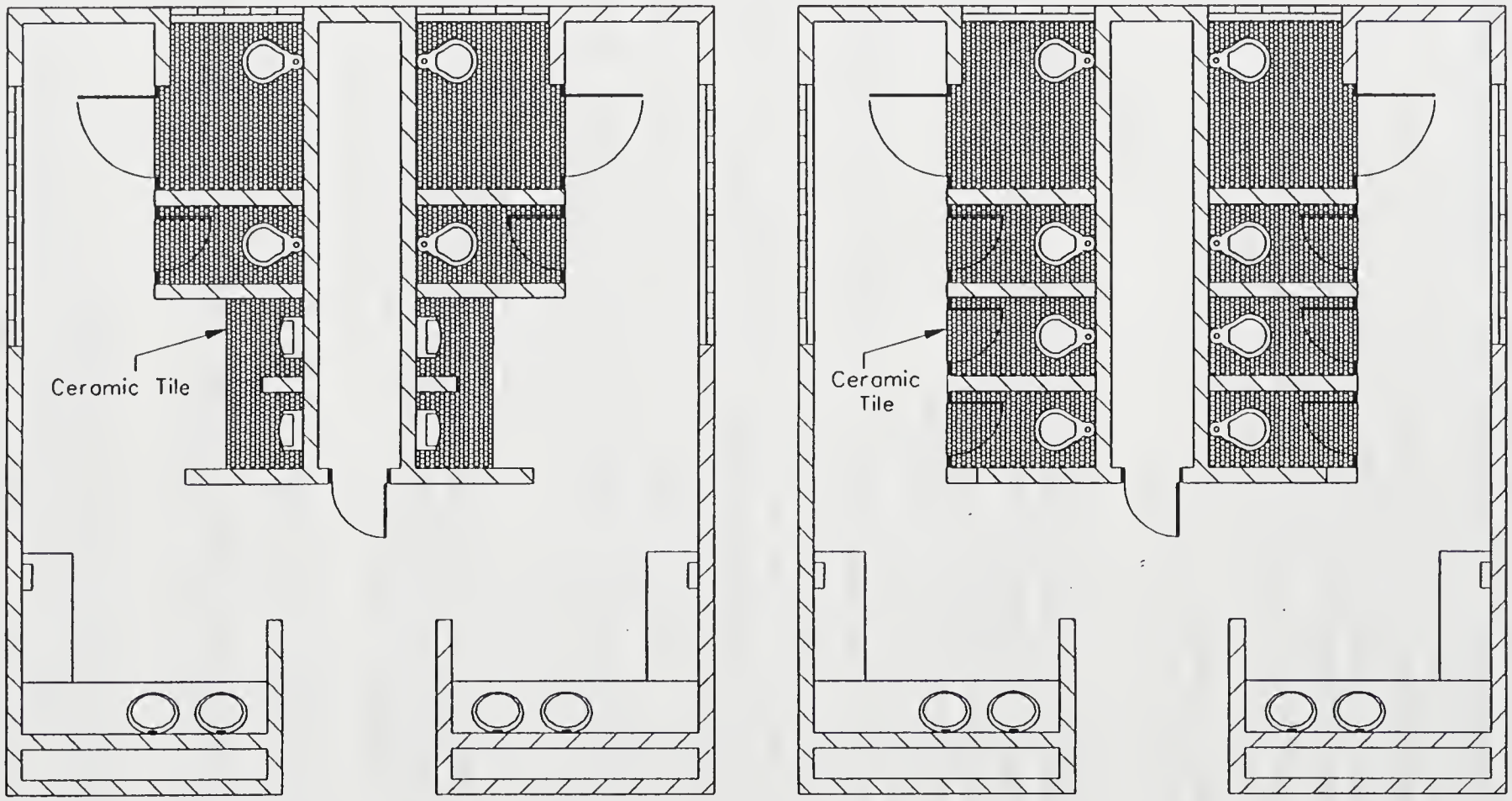
7. Rest Rooms. Rest rooms should be a "split" design with open doorways (see Figure 16-1I). Rest rooms with eight fixtures should be approximately 700 ft^2 (65 m^2). Determine the number of urinals and toilets using Figure 16-1D. Design the rest room entry to prohibit direct sight lines into rest rooms from the lobby. The split design allows one-half of the rest room to be closed for cleaning, repairs, and off-season low usage. Also, install a diaper changing station in both the men's and women's rest rooms. Plumbing and electrical systems should be valved and switched, respectively, to allow repair work in one-half of each rest room. The following provides additional information on rest rooms:

- Standardization of components such as faucets, valves, fixtures, washers, lighting, and locks are essential for ease of replacement. High-quality, heavy-duty components are required.

- Rest room walls should be tiled with a neutral color for ease of maintenance.

- Construct toilet stall partitions with minimum 4-in (100-mm), glazed-tile concrete blocks.

- Recessed toilet paper holders are desirable.



TYPICAL REST ROOM LAYOUT
(Rest Rooms with Stalls for the Disabled)

Figure 16-1I

- Provide three-quarter length stainless steel stall doors with heavy-duty hinges and latches.
- Toilet stools will be of high-quality, "institutional type," floor-mounted, rear-discharge fixtures.
- Specify use of water-saving, automatic-flushing devices.
- Install wash basins (i.e., lavatories), other than accessible wash basins, with heavy-duty, twist-type, self-closing faucets with cam ball-bearing pressure plates or automatic controls.
- Specify access doors below basins to be manufactured of stainless steel material.
- Provide an infrared sensory device at accessible wash basins.
- Include a small plate glass mirror over wash basins.
- Specify and locate heavy-duty hand dryers near the lavatories to minimize a slippery floor condition.
- Provide heavy-duty soap dispensers.

8. Flooring. Provide terrazzo flooring in the lobby and rest rooms except for the tile flooring under urinals and stalls. Terrazzo flooring will be curved upward at the edges (i.e., where it meets the wall) to enhance the cleaning process.

9. Unisex Rest Room. This room serves the disabled person who needs assistance. It should be located off of the lobby and is generally 60 ft^2 (6 m^2) in which one toilet and one lavatory are provided.

10. Mechanical/Storage Room. This room will house all of the mechanical equipment necessary to serve the facility. Approximately 350 ft^2 (32 m^2) is required with access doors to both the interior lobby and the exterior. Provide a 5 lb (2.26 kg) ABC fire extinguisher in this room. Also include a desk and telephone in the room. Storage space is required with shelving for toiletry items, cleaning liquids, and appliances.

11. Welcome Centers/Visitors Center. A welcome/visitors center generally requires an additional 300 ft^2 (28 m^2) of flooring for a service counter and storage room. Provide a minimum 8 ft (2.4 m) counter for the distribution of brochures and/or information services. Also provide a gate to secure the counter area and a storage room of approximately 250 ft^2 (23 m^2).

16-1.05(h) Accessibility Requirements

Design all elements of the rest area facility to properly accommodate the physically disabled according to the criteria presented in Chapter 58, *ADA Accessibility Guidelines for Buildings and Facilities*, and the *Illinois Accessibility Code*.

16-1.05(i) Utilities

Generally, rest areas are located in rural areas where utility services are not readily available. Water, electric, gas, and sewer services are necessary for a rest area facility. The following provides information on these rest area utilities:

1. Water. Obtain water service from an adjacent municipal system. If this option is not available, then use a well-water system. Also use a back-up well to maintain adequate supply and pressure during peak periods. Determine water demand from Figure 16-1D. Evaluate all water systems, well or municipal, for quality and, if deemed necessary, treat to remove objectionable minerals and/or gases. Hard water also may be treated to avoid early deterioration of fixtures.

2. Electricity. Obtain electric service from the local utility company. Provide a high-efficiency, commercial-grade cooling unit in the facility to cool all areas of the building.

3. Gas. Consider natural gas where readily available to provide for the heat source. The use of propane gas is not desirable because of the potential for vandalism. Perform life-cycle cost analyses of energy sources, for heat and cooling requirements. Provide a high-efficiency, commercial-grade heating unit in the facility to heat all areas of the building.

4. Sewer. Desirably, connect sewer systems to a local municipal system. Where this is not practical, consider the construction of sewage lagoons. Other sewage systems that may be considered include:

   - purification mounds,
   - recirculating sand-filter systems, and
   - self-contained systems of reusable chemicals.

   Perform life-cycle cost analyses to determine the appropriate system for the facility. Size sanitary sewer lines and lift stations in accordance with the *Illinois Plumbing Code*. Design lift-station pressure switches for specific requirements and pumping demands. Provide a malfunction or power-outage warning signal in the building for wells and lift stations.

16-1.05(j) Outdoor Electrical and Mechanical Equipment

Where practical, locate heating and air conditioning equipment indoors or on the building rooftop. If the only reasonable outdoor location is at ground level, then provide a security fence around the equipment that is architecturally compatible with the building design.

Locate electrical transformers and exterior electrical cabinets on an inconspicuous side of the building away from the view of entering patrons. If necessary, screen these items from view with plantings or architecturally compatible fencing. Coordinate with the utility company for required equipment access clearances.

16-1.05(k) Landscaping

When cost effective, preserve existing shade trees and other natural features to increase the aesthetic value of the site. Develop the facility with minimal disturbance to natural terrain and existing plant growth. Supplement existing vegetation with landscape treatments to achieve an environment conducive to rest and relaxation. Where applicable, give consideration to the acquisition of adjacent right-of-way or easement where a scenic view or natural attraction can be correlated with shorelines, ridgetops, woods, and/or other natural features.

Promote the use of low-maintenance features in a facility's landscape plans. Consider providing earth mounding to screen features such as sewage lagoons and to enhance the visual effect of plantings. See Chapter 59 for additional information on landscaping, plant material, and erosion control.

16-1.06 Rest Stops

16-1.06(a) General

Rest stops are facilities constructed on State highways other than freeways or expressways. These facilities are generally located on one side of the highway and serve both directions of travel. The need for a rest stop is initiated by the district and submitted to the Rest Area Task Force Committee (RATFC) for concurrence. Also included are scenic overlooks and roadside tables. Scenic overlooks also may provide rest room facilities, enlarged parking facilities, and picnic tables.

16-1.06(b) Site Selection

When it is determined that a State highway should be considered for rest stops, representatives of the RATFC and the district will investigate and prioritize potential sites. Most of the site selection guidelines presented in 16-1.04(b) are also applicable to rest stops. Locate rest stops

at sites with natural settings and shade. To avoid its misuse as a local park, do not locate rest stops close to urban areas.

Rest stops usually have rest rooms, limited parking spaces, and several picnic tables. Generally, running water and flush toilets are provided unless the availability of water is not practical for a particular site, in which case a vault type is used. A minimum designed facility requires approximately 4 acres (1.6 ha).

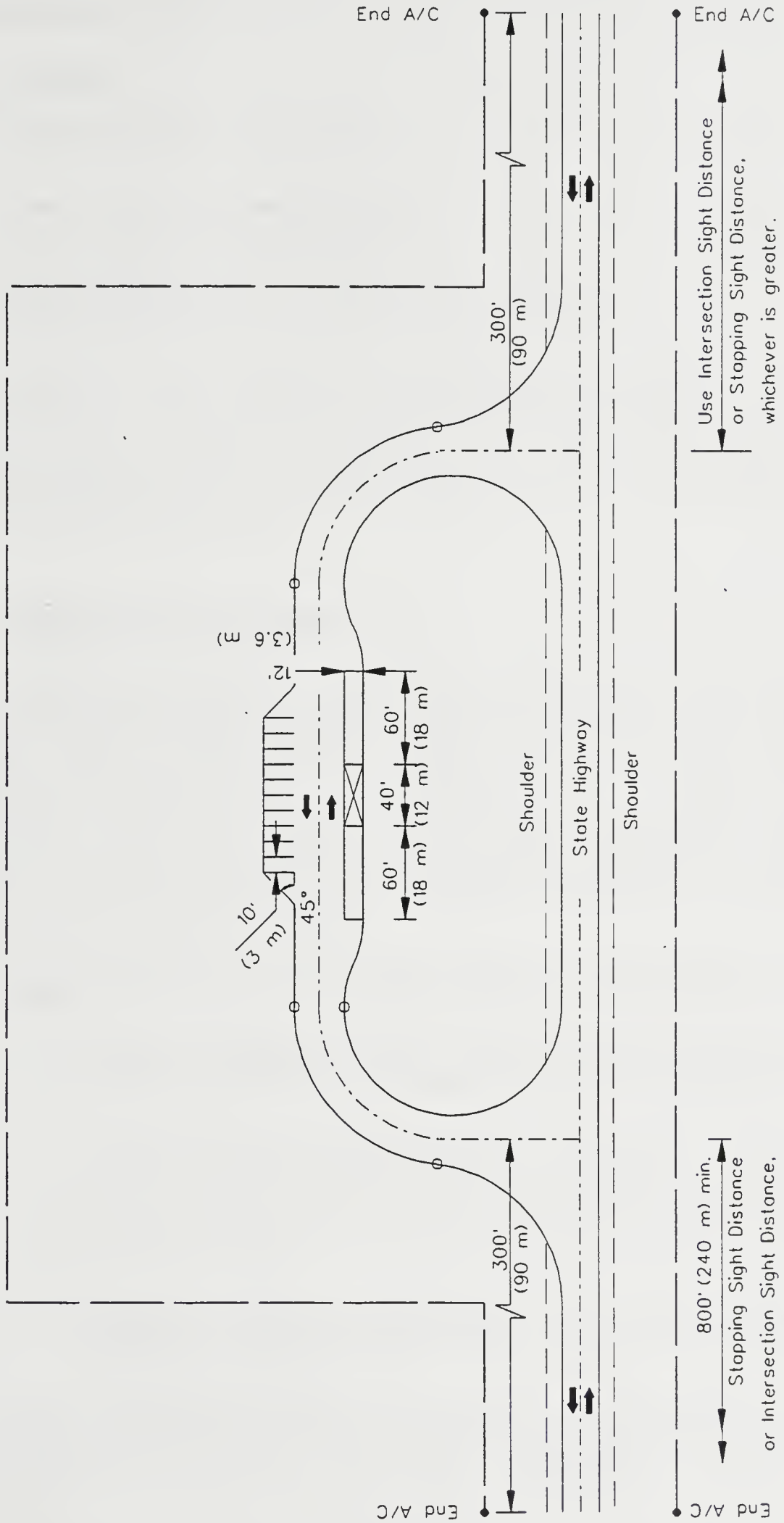
16-1.06(c) Design Guides

A typical rest stop configuration is illustrated in Figure 16-1J. Entrances to the facility and the inner roadway should accommodate the movement of two-way traffic. Provide minimum intersection sight distance as discussed in Section 36-6. Entrance radii are typically simple curves, and the roadway surface beyond the limits of the shoulder should be an aggregate material.

Base the estimated vehicle parking spaces on 20-year, two-way ADT. Provide for one passenger car stall for every 500 vehicles passing the facility and one truck stall for every four passenger car stalls. A minimum number of four car stalls and one truck stall is necessary to warrant the consideration of such a facility. Parking stalls, although not striped, should be provided for passenger cars at 10 ft x 20 ft (3 m x 6 m) and for trucks at 12 ft x 60 ft (3.6 m x 18 m). Use a WB-55 (WB-17) design vehicle for turning roadway criteria, see Chapter 36.

16-1.06(d) Access Control/Right-Of-Way

A rest stop facility shall be provided with access control to enhance the site and to preclude the future development of adjacent commercial properties. This will prevent the rest stop from being used as customer parking. Figure 16-1J also illustrates the extent of access control that should be acquired to ensure the intended functions of the facility. Exercise engineering judgment in acquiring access rights because more or less distance may be required depending upon the exact locations of property lines.



Note: Design all radii and roadway widths consistent with Designated State Truck Route System classification.

TYPICAL REST STOP

Figure 16-1J

16-2 WEIGH STATIONS

16-2.01 General

Truck weighing facilities are necessary to:

- collect data for pavement research,
- monitor single axle loads (ESAL's),
- inspect trucks for safety violations, and
- remove illegal trucks from the Illinois highway system.

Other agencies (e.g., State Police, Department of Agriculture, Interstate Commerce Commission) also use weigh stations for inspection purposes. A weigh station provides a means to monitor vehicles for compliance with Federal Regulations and State statutes. Interstate weigh stations are discussed in Section 16-2.03. Arterial weigh station facilities are discussed in Section 16-2.05.

16-2.02 Weigh Station Committee

To ensure a level of consistency in all matters concerning weigh stations, the Department has established a Weigh Station Committee. The Committee directs and monitors the truck weight program. It also provides coordination with the districts, the Illinois State Police, and the Department of Agriculture. In addition to serving as a technical liaison with these agencies, the Committee is responsible for providing long-range planning and developing policies for design, construction, operation, and maintenance. The Weight Enforcement Engineer of the Bureau of Operations chairs the Committee. The Committee is comprised of representatives from IDOT bureaus and other agencies as follows:

1. Division of Highways. The Division of Highways is responsible as follows:

   a. Bureau of Operations. This bureau is charged with maintaining the weigh station facilities, maintenance of the electronic scales, signing, and traffic operations.

   b. Bureau of Design and Environment. This bureau is responsible for providing the environmental survey of the site and for the geometric design of the weigh station layout. This bureau also lets all construction contracts except those concerning the scale house.

   c. Bureau of Bridges and Structures. This bureau prepares the scale pit and inspection pit design.

2. Capital Development Board. This agency is responsible for the preparation of construction drawings and contract specifications for the scale house and

appurtenances. It will also let the contract for the construction of the scale house and provide construction supervision.

3. Office of Planning and Programming. This office is responsible for collecting and analyzing data concerning truck weights and dimensions.

4. Illinois State Police. This agency is responsible for the enforcement of State statutes regarding weight and dimension limitations.

5. District. The district is responsible for preparing the detailed plans for roadway construction of the weigh station. The district will also provide survey data, as needed by the Capital Development Board, for the design of the scale house.

16-2.03 Interstate Weigh Stations

16-2.03(a) Site Selection Criteria

Weigh stations on the Interstate system generally should be located near State lines to serve inbound traffic. Other sites within the State should be considered on high truck volume routes. Site selection for weigh station facilities should attempt to restrict by-pass opportunities via convenient alternate routes. The Weigh Station Committee will determine the need to construct a facility within a specific corridor. Representatives of the Weigh Station Committee and the district will select the site and submit the proposal to the Committee for concurrence. Consider the following criteria when selecting a site for a weigh station:

1. Utilities. Ensure that utilities are available to adequately serve the scale house.

2. Spacing. Provide a distance of approximately 4000 ft (1200 m) between the weigh station entrance or exit ramp gore and any adjacent interchange ramp gore.

3. Sight Distance. Provide decision sight distance to the weigh station exit ramp gore.

16-2.03(b) Planning

The following procedures are established to provide the proper coordination of various agencies involved in the planning of weigh stations:

1. Determine Location. Representatives of the district and the Weigh Station Committee will determine a suitable location.

2. Preliminary Layout. Prepare and submit a preliminary layout in the form of an aerial mosaic or scale drawing showing the following information:

- the scale house location and limits of entrance and exit terminals;
- the distance from the exit or entrance ramp gore to the ramp gore of the nearest interchange or to the nearest intersection, and
- the availability of telephone, electrical power, heating fuel, water, and sewer services.

3. Field Inspection. Conduct a field inspection of the site and ensure that all agencies involved are invited to attend.

4. Road Plan Preparation. Upon approval of the site by the Weigh Station Committee, prepare the road plans and submit them to the BDE. Appropriate low-maintenance landscaping should be included in the roadway plans or as a separate contract.

5. Preparation of Lighting Plans. All weigh stations should be illuminated. See Chapter 56 for the data to be submitted for preparing lighting plans.

6. Scale Pit Design. The district shall submit the following data for the scale pit design:

- soil borings and blow counts at each end and in the center of the proposed scale pit to determine the size and type of footings and whether pilings are necessary,
- location and details of the pit drainage, and
- estimated quantities for the pavement and the median section adjacent to the scale and for the approach pavement.

Upon receipt of the above information and a set of roadway plans, the Bureau of Bridges and Structures will prepare the scale pit plans.

Figure 16-2A provides the required information for the design of weigh stations. Submit this information to the BDE as soon as it becomes available.

16-2.04 Interstate Design Criteria

16-2.04(a) General

A typical Interstate weigh station facility with weigh-in-motion (WIM) capabilities is illustrated in Figure 16-2B. A WIM facility virtually eliminates the delay legal trucks experience from stopping at weigh stations. When a truck enters a facility, the dynamic scale in the ramp pavement will sort the vehicle into one of two lanes. The by-pass lane allows a legal weight vehicle to return

1. Property:
   - (a) Location and orientation of the site and legal description
   - (b) Property lines and dimensions
   - (c) Elevations and/or contours, including at least one bench mark
   - (d) Layout of proposed approach, weighing platform and scale house and exit.

2. Test Soil Borings
   - (a) To be made in area of proposed new buildings when required
   - (b) Type of soil and bearing capacity in pounds per square foot (kN/m^2)

3. Availability of water supply:
   - (a) City water supply available
     - Location
     - Distance from site
     - Size of main
     - Water pressure
     - Easements required
   - (b) Well to be provided
     - Information on wells in vicinity
     - Depth
     - Size
     - Yield in cubic feet per second (m^3/s)
     - Location
     - Water characteristics
     - Test holes drilled

4. Availability of sewers
   - (a) Sanitary district or city sewers
     - Location
     - Distance from site
     - Size at proposed connection
     - Invert elevation
     - Easements required
   - (b) Septic tank required
     - Absorption tests

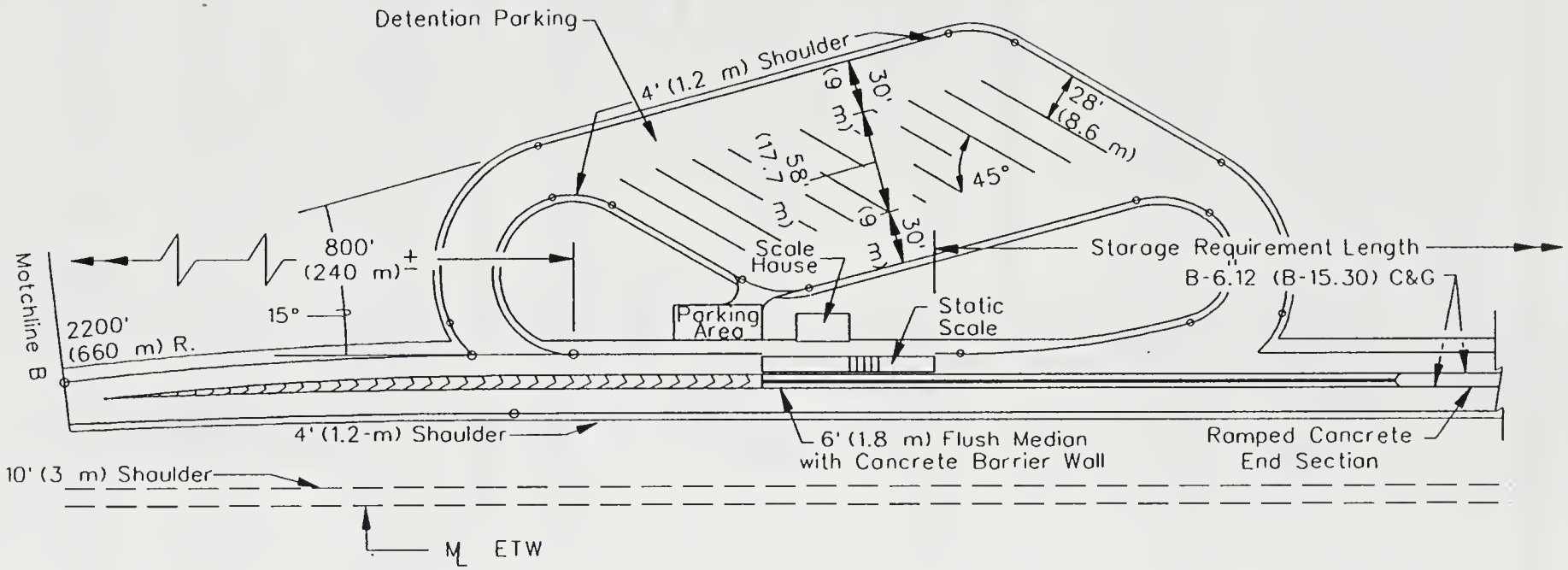
5. Availability of natural gas for heating (Input 55 ft^3 (1.6 m^3) per hour per building}:
   - (a) Natural gas available
     - Name of utility company
     - Location of service connection
     - Distance from site
     - Specific gravity pressure
     - Size of main at connection
     - Easement required

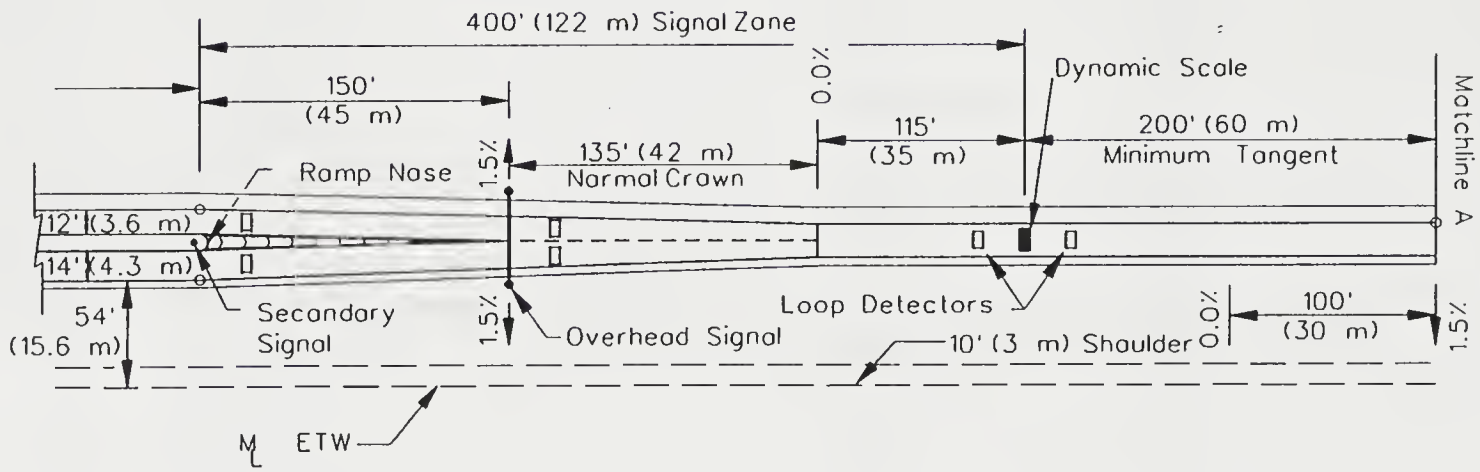
6. Availability of electrical service (17 kW per building, ramp lighting additional)
   - Name of utility company
   - Service available Volts Phase
   - Location of service
   - Distance from site

   Telephone Service:
   - Name of company
   - Location of service
   - Distance from site

DATA AND SURVEY INFORMATION FOR PROPOSED INTERSTATE WEIGH STATIONS

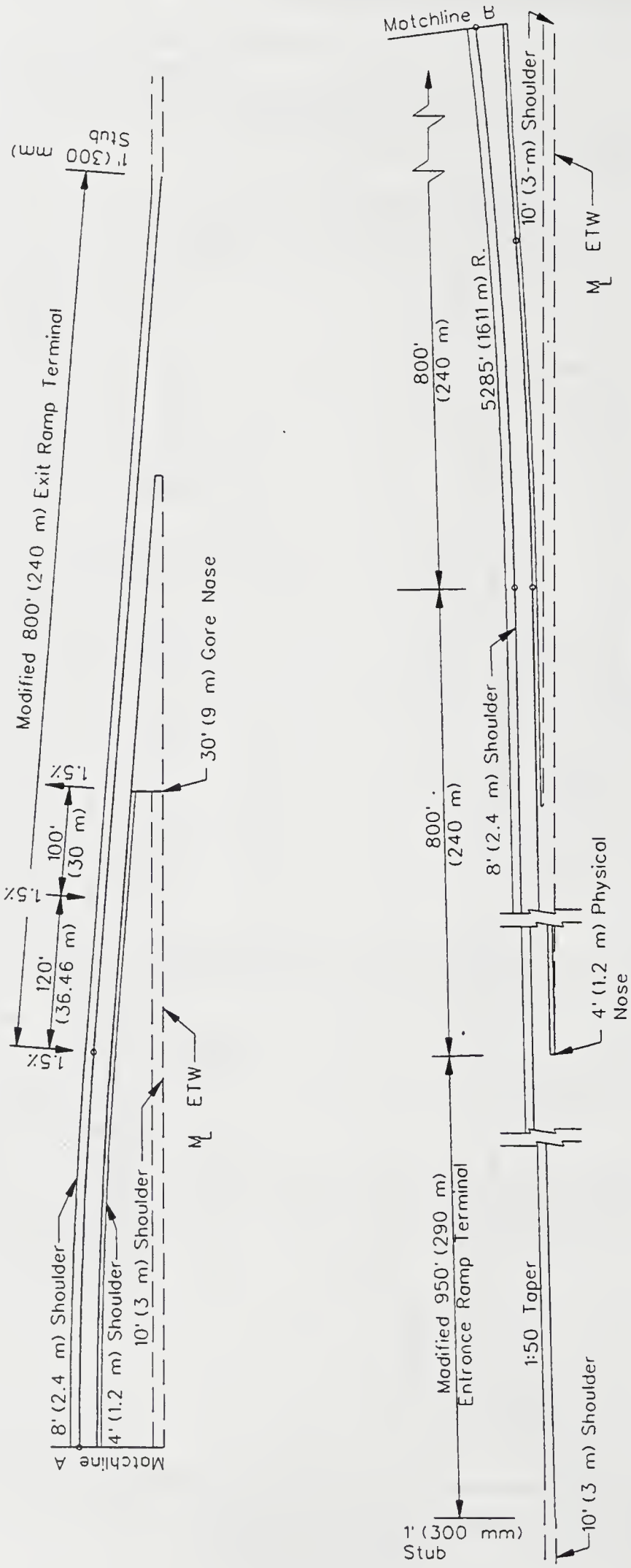
Figure 16-2A





TYPICAL INTERSTATE WEIGH STATION WITH WEIGH-IN-MOTION

Figure 16-2B



TYPICAL INTERSTATE WEIGH STATION WITH WEIGH-IN-MOTION

Figure 16-2B
(Continued)

to the freeway without any further delay. The static scale lane directs the vehicle to the static scales for a more precise weighing. The static lane vehicles then are either returned to the freeway or directed to the detention parking area.

There are five basic operational elements of a WIM facility as follows:

- the deceleration distance,
- the signal zone,
- the storage requirements,
- the acceleration distance, and
- the detention parking area.

Design the weigh station to accommodate the operational characteristics of a WB-65 (WB-20) design vehicle. Provide advanced signing in accordance with the *ILMUTCD*. Coordinate signing with the Bureau of Operations.

16-2.04(b) Weigh-in-Motion

The dynamic scale is placed in the exit ramp at the end of the required deceleration length. The WIM electronic processor can determine:

- vehicular speed,
- length of wheelbase,
- gross weight,
- axle weight,
- axle spacing,
- vehicle length, and
- classification of 13 different vehicle types.

A vehicle that is within 3% of its maximum legal weight limit or exceeds its legal limit will be directed to the static scale for a precise weighing. Vehicles that are determined to be within the legal weight limit are directed to a by-pass lane and returned to the freeway. As a vehicle passes over the dynamic scale, the vehicle will be directed to the static scale if the driver:

- exceeds the posted speed limit,
- does not maintain a 100 ft (30 m) distance from the rear of the forward vehicle, or
- fails to properly align the vehicle on the dynamic scale.

Pneumatic tubes or electronic sensors are placed on the outer edges of the dynamic scale to detect off-scale occurrences and to override the system to direct the vehicle into the static scale lane.

The "signal zone" is illustrated in Figure 16-2C which describes critical lengths of the WIM system. Trucks exit the freeway and decelerate to the posted speed of 30 mph (50 km/h) before passing over the dynamic scale. A WIM facility may be designed for a higher speed; however, extend the signal zone accordingly to provide approximately six seconds of signal viewing time.

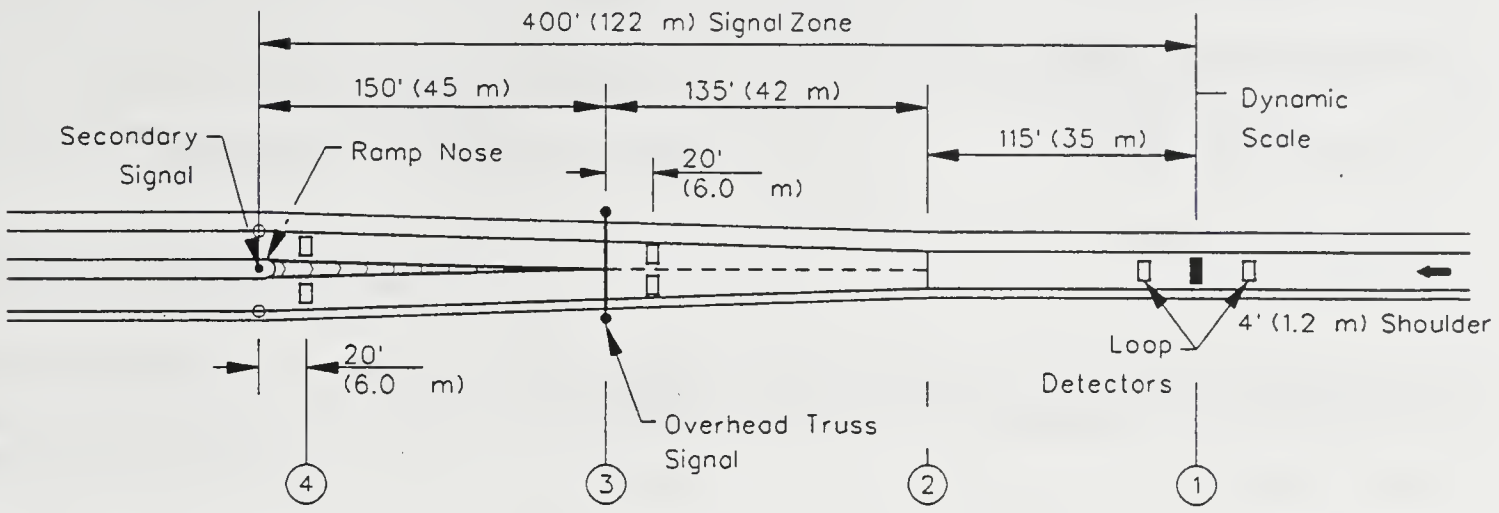
16-2.04(c) Storage Requirements

At a facility where only a static scale is provided, all trucks will stop and be weighed. Delays at such facilities are frequent and queuing often occurs on the deceleration ramp. Research has determined that approximately 12% of the trucks that enter a weigh facility are near their legal limit and require a more precise weighing on a static scale. Storage length requirements for static scale and WIM facilities are illustrated in Figure 16-2D. It is imperative that the signal zone of a WIM facility is free of stored vehicles. Consequently, use a safety factor of two in the storage equation that increases the 12% trucks-entering value to 25%. Provide the calculated storage length between the secondary signal and the static scale. Generally, a concrete barrier wall is desired in the median adjacent to the storage lane with a length equal in distance to the storage length requirements.

16-2.04(d) Entrance and Exit Terminals

The exit and entrance terminal designs are modified versions of the typical designs. The exit ramp terminal design provides a 4°30′ divergence angle from the freeway which normally will allow the design of a single horizontal curve to be used in advance of the dynamic scale. Provide a minimum distance of 800 ft (240 m) from the ramp gore to the dynamic scale to accommodate vehicular deceleration, allows drivers to maintain a steady speed, and achieve proper vehicular spacing. The approach tangent preceding the dynamic scale should desirably be level and smooth for 200 ft (60 m) to enhance scale performance. The ramp downstream from the dynamic scale also should be level for 100 ft (30 m).

Provide an acceleration distance of approximately 2000 ft (600 m) from the static scale to the gore nose of the freeway for trucks to achieve an acceptable speed before entering the freeway. Adjust the acceleration distance where the ramp terminal is on a grade greater than 3% or where the freeway level of service is adversely affected by the truck's merging speed. See Section 37-6.02 for additional guidance.



① *Vehicle approaches the dynamic scale at a posted speed of 30 mph (50 km/h). Loop detectors adjacent to the dynamic scale will determine vehicular speed.*

② *The distance of 115 ft (35 m) past the dynamic scale is based on the length of a large truck (i.e., 75 ft (22.5 m)) plus one second travel time at 30 mph (50 km/h) (i.e., 40 ft (13 m)). At this position, an overhead signal arrow will direct the driver to the proper lane. The remaining distance to the overhead signal is 135 ft (42 m) which allows nearly three seconds of viewing time. Loop detectors located in front of the overhead signal truss will deactivate the overhead signal and simultaneously activate the secondary signal allowing a continued lane arrow assignment.*

③ *The overhead signal truss displays a lane arrow for proper lane assignment. The truss signal is deactivated when the vehicle passes over the loop detector preceding the truss. The secondary signal is simultaneously activated as a vehicle passes over the loop detector. This provides a continuation of the lane arrow assignment for an additional three seconds.*

④ *When a vehicle passes over the loop detector preceding the secondary signal, it deactivates the secondary signal and detects a vehicle that violates the proper lane assignment. When a violation occurs, a warning alarm is activated in the scale house and the violator is intercepted and directed to the detection parking area.*

WEIGH-IN-MOTION (WIM) SIGNAL ZONE
Figure 16-2C

Design Year Two-Way ADT _____

One-Way ADT x 60% _____

x % Commercial Vehicles _____ = _____

% Multiple Units (MU) _____ = _____ MU

% Single Units (SU) _____ = _____ SU

MUPH x 0.06 = _____ MUPH

SUPH x 0.09 = _____ SUPH

$\frac{\text{MUPH x 75}}{8.2}$ = _____ MU Storage Length (ft) US Customary

$\frac{\text{MUPH x 22.5}}{8.2}$ = _____ MU Storage Length (m) Metric

$\frac{\text{SUPH x 30}}{8.2}$ = _____ SU Storage Length (ft) US Customary

$\frac{\text{SUPH x 9.0}}{8.2}$ = _____ SU Storage Length (m) Metric

Add SU + MU Storage = _____ Static Scale Required Storage Length (ft) (m)

Weigh-in-Motion (WIM) Storage Calculations:

Total Required Storage Length (Static Scale) _____ x 25% = _____ ft (m)
WIM Required Storage Length

REQUIRED STORAGE LENGTHS
Figure 16-2D

16-2.04(e) Detention Parking Requirements

Design the detention parking area to accommodate a minimum of 10 trucks that may be held for overweight violations or vehicle inspections. The turning roadways to and from the parking area should have a 50 ft (15 m) inside radius and are generally 30 ft (9 m) wide. Adjust the parking angle for specific site conditions. Provide a 4 ft (1.2 m) concrete shoulder on the turning roadways and parking area. See Figure 16-2B.

16-2.04(f) Pavement Design

Design the weigh station ramps and detention parking area according to Section 54-1.08. Truck weighing stations are considered "high stress" locations. See Chapter 54 for pavement and shoulder design guides.

16-2.04(g) Vehicle Inspection Pit

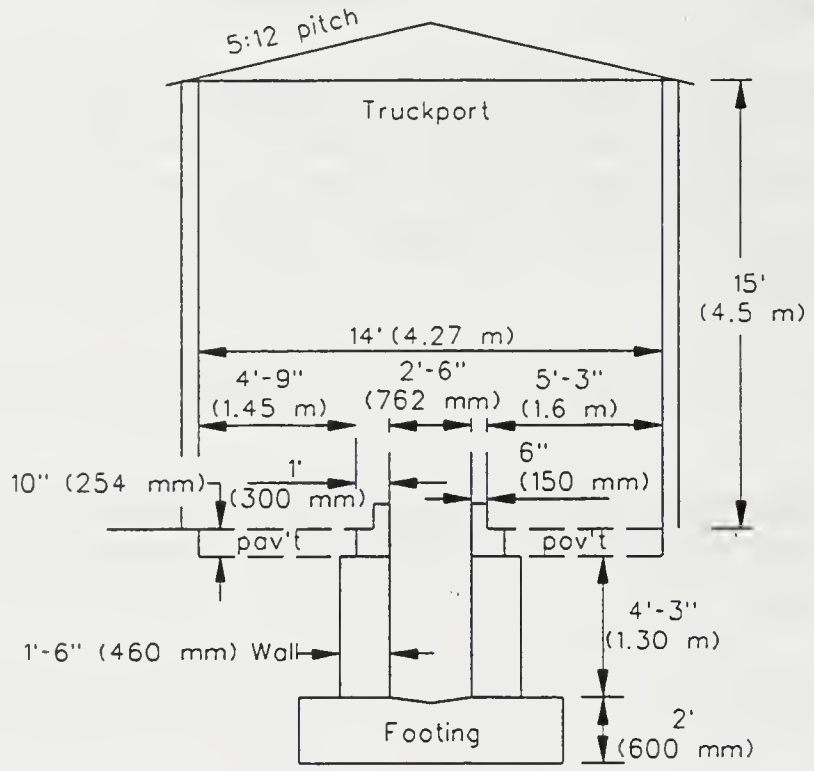
A vehicle inspection pit may be provided to enhance the safety inspection of trucks or other special vehicles. Locate the pit adjacent to the detention parking area to provide joint parking opportunities. A schematic design is shown in Figure 16-2E.

16-2.04(h) Conversion of Static Scale Facility to Weigh-in-Motion

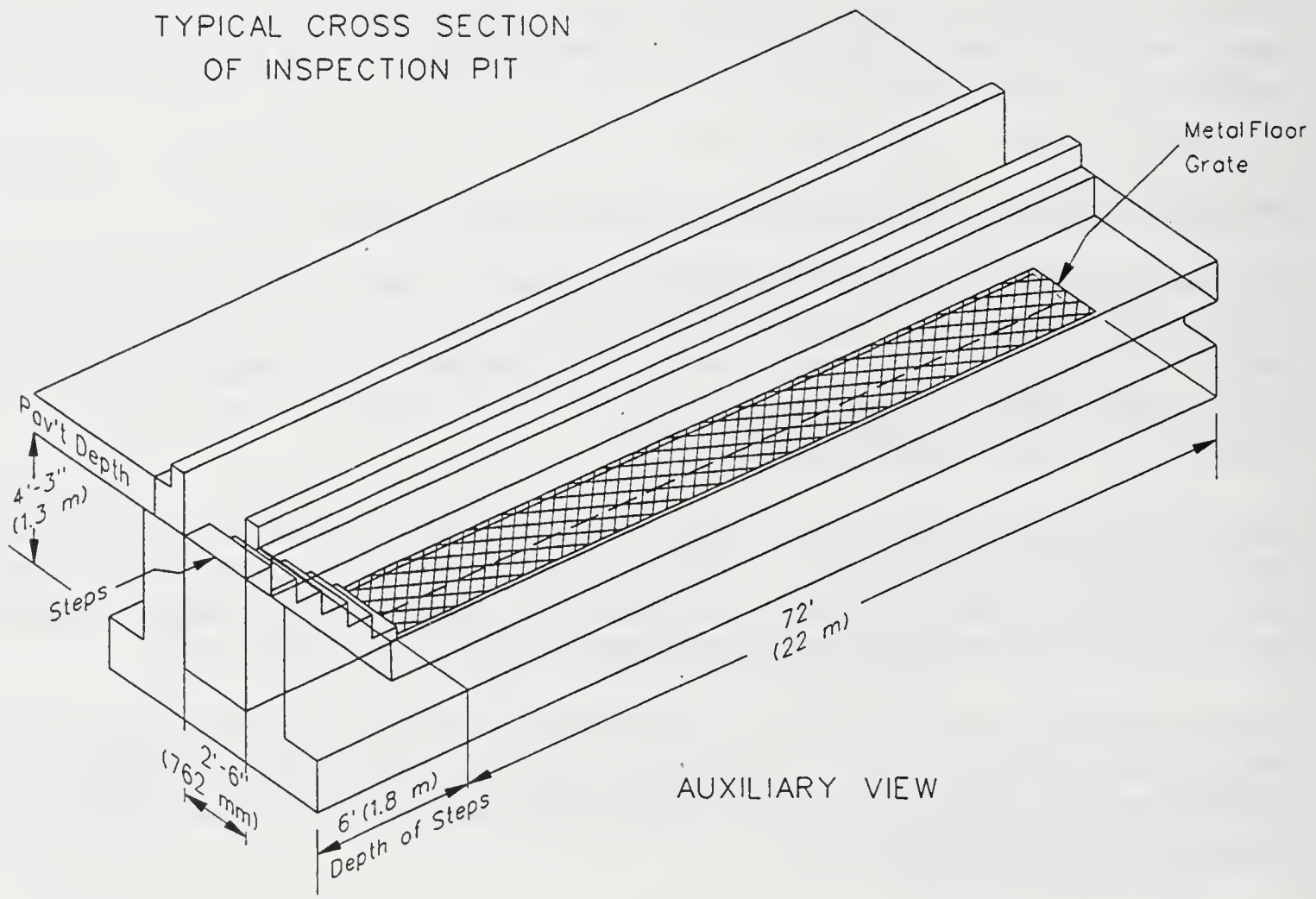
Most existing static scale weigh stations can be converted to weigh-in-motion facilities within the existing right-of-way limits. Reconstruction will be required of the exit ramp terminal, ramp proper, and detention parking area. The remaining elements of the weigh station (i.e., scale house, static scale, by-pass lane, storage lane, and acceleration ramp) only will need replacement if in deteriorated condition.

Design the exit ramp terminal as illustrated in Figure 16-2B. With the conversion of existing facilities, the ramp should be aligned with the existing by-pass lane. Extend the existing 6 ft (1.8 m) median upstream a distance equivalent to the required storage length. Typically, a concrete barrier wall should be constructed between the by-pass and static lanes.

Widen the turning roadways to and from the detention parking area to accommodate the WB-65 (WB-20) design vehicle criteria. Design the detention parking area in a diagonal pattern according to Figure 16-2B. The existing scale house should adequately accommodate the new WIM equipment without expansion.



TYPICAL CROSS SECTION
OF INSPECTION PIT



AUXILIARY VIEW

TYPICAL INSPECTION PIT DESIGN

Figure 16-2E

16-2.04(i) Intelligent Transportation Systems (ITS)

Weigh station facilities may be provided with electronic systems that can monitor passing trucks equipped with transponders. A dynamic scale is located in the mainline pavement preceding the exit ramp to the weigh station. A roadside reader connected to the scale house computer system emits a signal to an approaching truck that is equipped with a transponder. The roadside reader relays the signal to the scale house computer, identifying the particular vehicle, while the dynamic scale computer analyzes the vehicle's weight. A record is created by merging the weight of the vehicle with the transponder information. Using the merged record, a signal is transmitted back to the transponder. A green light indicates approval to by-pass the weigh station and a red light indicates that the vehicle must exit into the weigh station for the normal weighing process.

These electronic systems can be expanded to include additional features (e.g., tracking hazardous materials, identifying mechanical malfunctions) and may be interconnected to other State systems.

16-2.05 Arterial Weigh Stations

16-2.05(a) General

Arterial weigh stations are constructed on State highways other than freeways. This facility is typically located on one side of the highway and serves both directions of travel. The Weigh Station Committee determines the need for an arterial weigh station. A 12 ft (3.6 m) wide static scale is provided for single and dual-axle weighing.

16-2.05(b) Site Selection

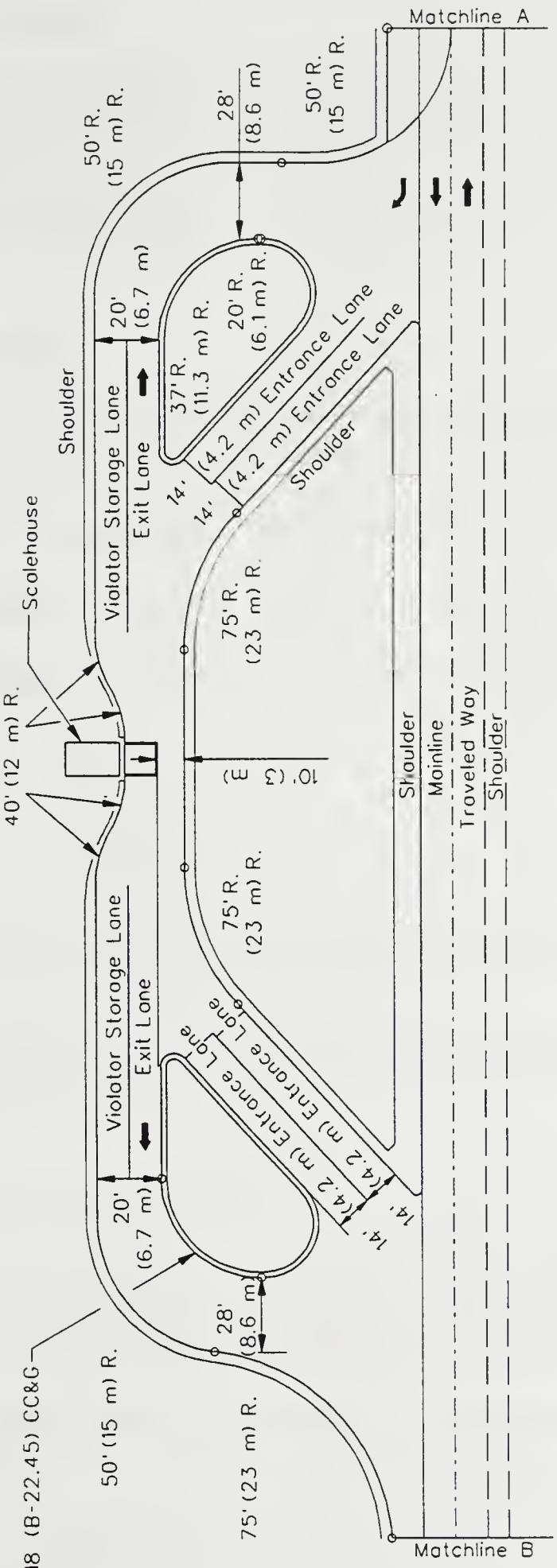
Arterial weigh stations generally are located at ports-of-entry on high-volume arterial State routes. Other intra-State facilities may be located at high-volume truck routes as deemed necessary.

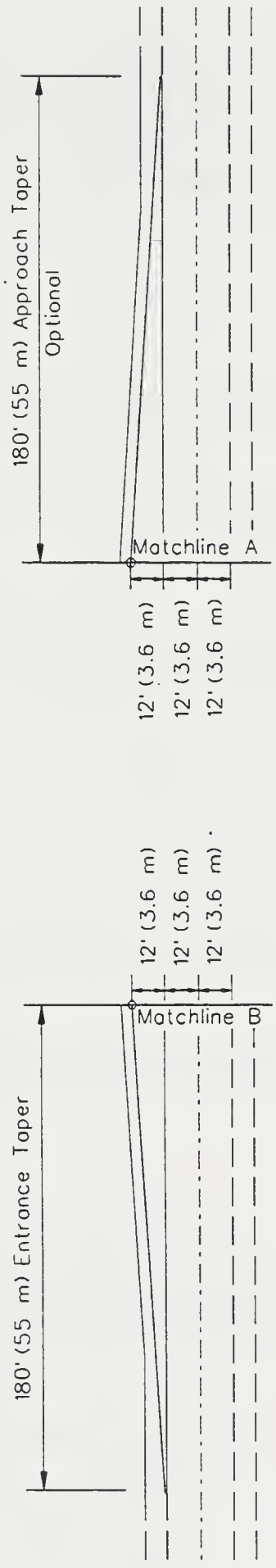
Where it is determined that a specific corridor of a State highway should be considered for an arterial scale facility, representatives of the district and the Weigh Station Committee will investigate feasible locations and determine a suitable site. Criteria for site selection primarily are based on availability of right-of-way, minimizing by-pass opportunities, and availability of utilities to support the scale house.

16-2.05(c) Design Guides

The geometric design of an arterial weigh station is illustrated in Figure 16-2F and should accommodate the appropriate design vehicle for the highway classification. A facility is

designed to store two or four vehicles from both directions of travel. If additional storage is required, construct auxiliary lanes on the mainline. For example, if opposing volumes restricts left-turn entry, consider providing a flush left-turn lane on the State highway.





TYPICAL ARTERIAL WEIGH STATION

Figure 16-2F

16-3 CONTRACT PLANNING AND COORDINATION

16-3.01 General

All rest area type facilities and weigh stations are inherently complex to build because they can involve as many as seven separate construction contracts to complete each project. Therefore, it is important to clearly define the scope of each contract relative to the others. Doing this can prevent overlapping scopes of work or omitting necessary work tasks. Both situations ultimately lead to expensive contractual problems in the field.

16-3.02 Scope

All rest area type facilities and weigh stations generally will be built through a combination of contracts. The following presents the recommended sequence of contract award:

1. Grading and Paving. Grading and paving, a unit-price contract, will be awarded first.

2. Lighting. The second award will be for lighting, a unit-price contract.

3. General. The general work typically is awarded as four lump-sum contracts as follows:

   - general,
   - plumbing,
   - HVAC, and
   - electrical.

   The general contractor is named as the prime contractor who coordinates the work of the other three assigned contractors.

4. Landscaping. The landscaping award, a unit-price contract, typically is the last contract to be awarded.

16-3.02(a) Division of Work

It is relatively simple to determine the scope of work for each contract. However, certain aspects of the work in each contract clearly affect subsequent contracts. Consider the following design elements to better avoid conflicts and omissions of scope:

1. Grading and Paving Contracts. Grading and paving contracts include the following items:

   - earthwork,
   - pavement and shoulders,

- curbs,
- storm sewers,
- right-of-way fencing,
- roadway signing,
- pavement striping, and
- seeding.

2. Lighting Contracts. Lighting contracts generally include the following items:

- light poles,
- light towers,
- sign lighting,
- unit duct and wiring, and
- controller.

3. General and Assigned Contracts. General and assigned contracts include the following items:

- complete buildings,
- utility connections,
- water system,
- sanitary sewer system,
- site furnishings, and
- sidewalks.

4. Landscaping Contracts. Include the following items for landscaping contracts:

- sodding and final seeding,
- trees and bushes, and
- flower plantings.

16-3.02(b) Coordination of Scope

Experience has shown that the following suggestions simplify the construction process and ultimately reduce costs:

1. Grading and Paving Contracts. Consider the following for grading and paving contracts:

   a. Topsoil. Rather than placing topsoil where buildings and sidewalks will be located, stockpile the topsoil for placement after all other general contract work is complete. This will promote better turf growth.

b. Temporary Seeding. Specify temporary seeding for areas that will be disturbed under future contracts.

c. Curb Slipforming. Prohibit slipforming of PCC curbs where they will abut PCC sidewalks. Formed PCC curbs will provide a better appearance adjacent to sidewalks.

d. Earthwork. Design earthwork grades in sidewalk areas to ensure compliance with accessibility requirements. Design earthwork carefully to minimize excavation during the general contract.

2. Lighting Contracts. Consider the following when preparing lighting contracts:

a. Unit Ducts. Coordinate unit duct routing with building utilities to avoid conflicts.

b. Lighting Controller. Allow space in the mechanical room for the lighting controller.

3. General and Assigned Contracts. Consider the following for general and assigned contracts:

a. Plan Limits. Establish plan limits of areas to be seeded under the landscaping contract. Beyond these limits, require restoration by the general contractor.

b. Topsoil Spreading. After sidewalk and building work is complete, specify the spreading of topsoil that was stockpiled during the grading and paving contract.

c. Topsoil Grading. Specify that topsoil remain in a rough-graded condition for the landscaping contract.

4. Landscaping Contracts. The following should be considered when preparing landscape contracts:

a. Grading and Seeding. Specify fine grading and seeding of all areas that remained in a rough-graded condition under the general contract.

b. Number of Contractors. Experience has shown that only one contractor should be responsible for all landscaping work within a clearly defined area. Otherwise, unneeded conflicts will arise.

16-4 REFERENCES

1. NCHRP 324, *Evaluation of Safety Roadside Rest Areas*, Transportation Research Board, 1989.

2. *Traffic Characteristics on Illinois Highways — Bi-Annual Report OPP.*

3. *A Policy on Geometric Design of Highways and Streets*, AASHTO, 2001.

4. *Accessibility Guidelines for Buildings and Facilities*, U.S. Architectural and Transportation Barriers Compliance Board, 1991.

Chapter Seventeen

Bicycle and Pedestrian Accommodations

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

Chapter Seventeen
BICYCLE AND PEDESTRIAN ACCOMMODATIONS

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CHAPTER SEVENTEEN
BICYCLE AND PEDESTRIAN ACCOMMODATIONS

When planning transportation improvements, the Department considers the travel needs of all users of a transportation corridor including bicyclists and pedestrians. Bicycle and pedestrian travel demand in the vicinity of a project is determined early in the project planning phase. When sufficient demand is indicated, the Department will provide the appropriate accommodations.

The correct application of the criteria and guidelines presented in Chapter 17 will result in consistent designs and subtle roadway design changes that will facilitate bicycle and pedestrian travel. Such changes will provide improved transportation opportunities for both bicyclists and pedestrians.

17-1 BICYCLE ACCOMMODATIONS: POLICIES AND PROCEDURES

17-1.01 Definitions

The following terms and definitions apply to Chapter 17:

1. Bikeway. A generic term for any road, street, path, or way which in some manner is specifically designated for bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or shared with other transportation modes.

2. Shared Roadway. Any roadway upon which a separate bicycle lane is not designated and which may be legally used by bicyclists regardless of whether such facility is specifically designated as a bikeway.

3. Bike Lane. The portion of a roadway surface that is designated by pavement markings and signing for the exclusive use of bicyclists.

4. Bicycle Path or Shared-Use Trail. A facility physically separated from the roadway and intended for bicycle or other non-motorized transportation (e.g., pedestrians, disabled persons in wheelchairs, in-line skaters). The terms path and trail generally are describing the same facility.

5. Bicycle Facilities. A broad term which includes bikeways, shared roadways, shoulders (which may be used by bicyclists), traffic control devices, shelters, and parking facilities for bicycles.

17-1.02 Policies

During the development of highway projects, give consideration to accommodating bicyclists and pedestrians. Assess bicycle travel demand during the early planning stage of a project. Provide bicycle accommodations when the warrants presented in Section 17-1.03 are met. For projects that include bicycle accommodation, forward a copy of the draft Phase I report to the Bureau of Design and Environment's Bicycle Coordinator. Where existing or anticipated bicycle and/or pedestrian traffic presents a potential conflict with motor vehicle traffic, strive to minimize the detrimental effects on all highway users who share the facility.

On bridge deck replacement or rehabilitation projects, bicyclists will be accommodated on the bridge when bicycles are permitted to operate on the roadway approaches.

If independent bikeways or trails are impacted as a result of a highway project, treat such facilities as low-volume roadways in accordance with Chapter 11. If certified by the State or Local Agency having jurisdiction as programmed for construction no later than five years beyond the anticipated completion of the highway project, treat proposed or planned paths and trails that cross or parallel a roadway in the same manner as existing roadways.

17-1.02(a) Exceptions

Consider accommodating bicycles and pedestrians on all projects except:

- along fully access controlled highway facilities on which bicycle and pedestrian access is prohibited (Illinois law allows the Department to restrict access by signing). Note: Consideration for bicycle and pedestrian accommodation crossing a fully access controlled highway will be granted an exception from consideration only if the traversing road is also a fully access controlled highway; and

- existing pavement resurfacing projects that do not widen the existing traveled way nor provide stabilized shoulders (e.g., SMART, 3P). However, in the development of SMART and 3P projects, consider accommodations which do not change the overall scope of work, such as striping changes, but are consistent with Department criteria and the needs of bicyclists (see Section 17-2.01(g)).

17-1.02(b) Partial Exceptions

On existing pavement resurfacing projects that do not widen the existing traveled way nor provide stabilized shoulders (e.g., 3-P, SMART) bicycle accommodation will generally be limited to restriping and/or resigning existing bike lanes or shared roadways. However, consideration may also be given for new bicycle accommodation on 3-P or SMART projects where local support is evident and the accommodated project remains limited to the overall scope of the

original road work. Design criteria should be consistent with Section 17-2.01. Design studies are not required.

17-1.03 Bikeway Warrants

Provide adequate on-road accommodations for bicycle travel in highway projects when any of the following situations exists:

- The highway or street is designated as a bikeway in a regionally or locally adopted bike plan or is published in a regionally or locally adopted map as a recommended bike route.

- The projected two-way bicycle traffic volume (see Section 17-1.04) will approximate 25 ADT or more during the peak three months of the bicycling season at a highway or street location where the current vehicular traffic volume will exceed 1000 ADT. Estimate the bicycle ADT projection based on a five-year time frame from completion of the project.

- The route provides primary access to a park, recreational area, school, or other significant destination.

- The route provides unique access across a natural or man-made barrier (e.g., bridges over rivers, bridges over railroad yards, bridges over freeways or expressways, highways through a National Forest).

- The highway project will negatively affect the recreational or transportation utility of an independent bikeway or trail. Highway projects will negatively affect at-grade paths and trails when they are severed, when the projected roadway traffic volumes increase to a level that prohibits safe crossings at-grade, or when the widening of the roadway prohibits sufficient time for safe crossing.

(For off-road Bicycle Path Warrants, see Section 17-2.02(a)).

17-1.04 Determining Bicycle Travel Demand

The concepts of identifying cycling origins and destinations, and thus travel demand, are discussed in the FHWA publication *Selecting Roadway Design Treatments to Accommodate Bicycles*. The following additional guidance is provided to determine bicycle travel demand where bicycle travel is difficult to predict:

1. Urban and Suburban Areas. Because of the potential for bicycle travel, bicycle accommodation will likely be warranted in the majority of urban and suburban areas, particularly at points of community development that generate, attract, or result in commercial, recreational, or institutional establishments near or along highways.

2. Rural Towns. Bicycle accommodation may be warranted in rural towns located on main highways where bicycle travel within the community and from the outlying populated areas could justify such accommodation.

3. Rural Highway Projects. Rural highway projects that provide unique access over a major barrier, such as a river, would be expected to meet the warrants.

4. Unpopulated Rural Areas. In unpopulated rural areas, typical origins and destinations are far less frequent. Thus, the need for bicycle accommodation may not be warranted.

17-1.04(a) Assessment of Bicycle Travel Within Highway Projects

Bicycle origins and destinations should be reviewed for each project and noted in a checklist format. All checklists are in the Section 17-6. Such information provides the basis for evaluating whether or not bicycle accommodation is necessary within a project. This section provides two checklists, an example map, and a travel assessment form that should be included in all Phase I reports, except for projects excluded in Section 17-1.02(a). If projects include accommodation for bicycles, notify BDE's Bicycle Coordinator. If bicycle accommodations will be excluded from the project, complete and include, in all applicable Phase I reports, the forms presented in Figures 17-1A, 17-1B, and 17-1C.

17-1.04(b) Bicycle Travel Generators in Project Vicinity

Review and record the potential bicycle travel generators in the vicinity of the project, such as those shown in the checklist in Figure 17-1A. Note on the checklist the types of generators within 1 mile (2 km) of the project corridor. To the Phase I Report, attach a map of this area showing the general location of these generators as illustrated in Figure 17-1B. Sections of Municipal or Township maps are acceptable, as well as photocopies of aerial photos. The map will serve to indicate where bicyclists will cross or ride along the corridor. It will also serve to indicate the absence of any of the destinations presented in Figure 17-1A and, thus, provide justification for excluding bicycle accommodation.

17-1.04(c) Public Coordination

The organizations presented in Figure 17-1C shall be contacted to assess any nearby bicycle travel or planned development of recreational trails or other generators. Include documentation of coordination in the Phase I report.

Generators	Yes	NA	Generators	Yes	NA
Residential Areas	☐	☐	Shopping Centers	☐	☐
Parks	☐	☐	Hospitals	☐	☐
Recreation Areas	☐	☐	Employment Center	☐	☐
Churches	☐	☐	Government Offices	☐	☐
Schools	☐	☐	Local Businesses	☐	☐
Libraries	☐	☐	Industrial Plants	☐	☐
Existing Bicycle Trails	☐	☐	Public Transportation Facilities	☐	☐
Planned Bicycle Trails	☐	☐	Other ( )	☐	☐

CHECKLIST FOR BICYCLE TRAVEL GENERATORS IN PROJECT VICINITY

Figure 17-1A

17-1.04(d) Bicycle Travel Assessment

Based on the bicycle travel indicators presented in Sections 17-1.04(b) and 17-1.04(c), address the questions in the bicycle travel assessment form (see Figure 17-1D) and attach the completed form to the Phase I report.

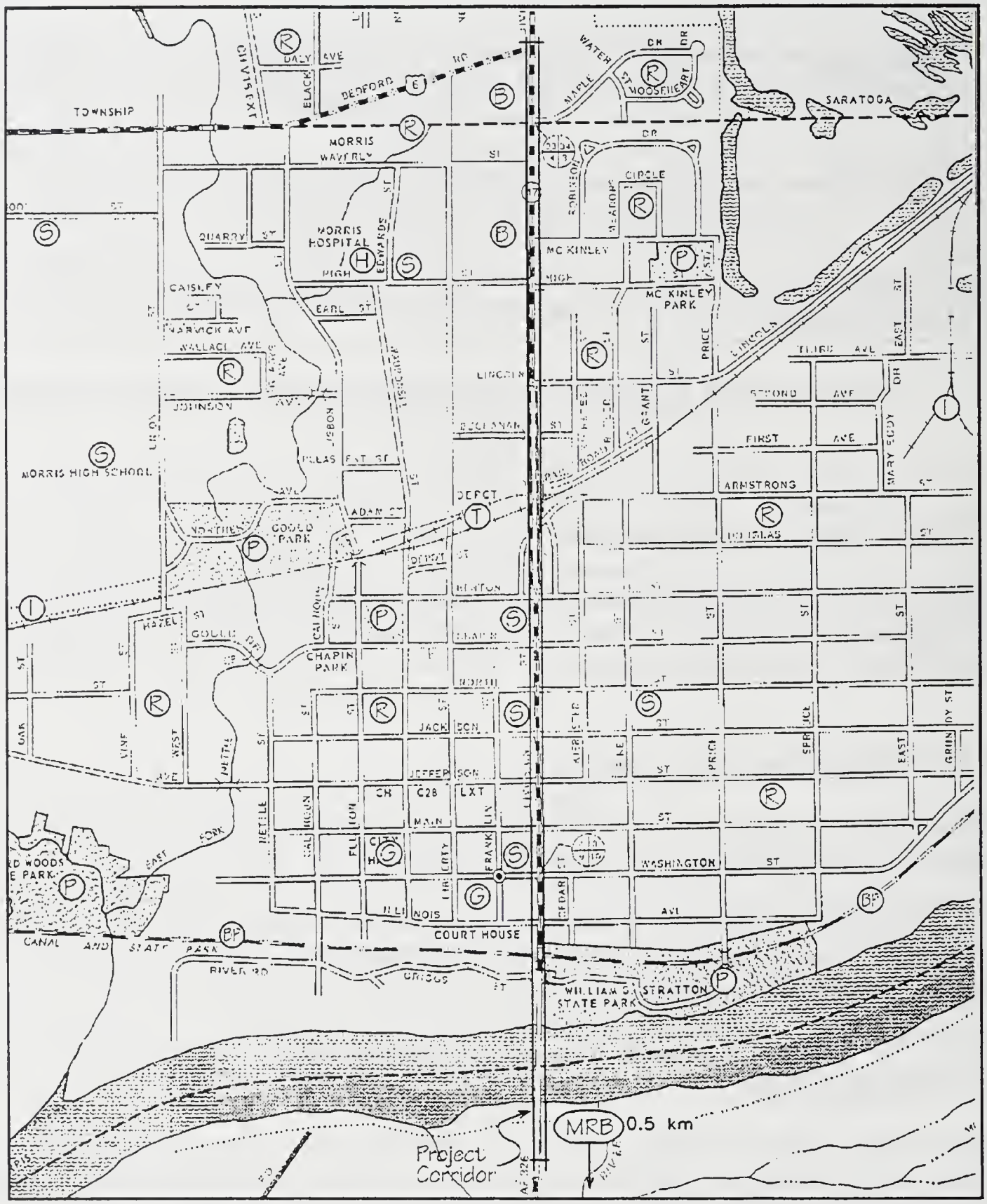
17-1.05 Maintenance and Jurisdiction

Responsibility for ongoing maintenance of bikeway facilities within the roadway surface is assumed to be an integral part of roadway maintenance.

Responsibility for maintenance of bikeway and pedestrian facilities separated from the roadway surface should be delegated by Agreement with local/State jurisdictions or others early in the planning process (see Chapter 5).

17-1.06 Right-of-Way

Acquire right-of-way for bikeway facilities in accordance with existing IDOT land acquisition policies and procedures. Additional right-of-way required for bikeway purposes should be purchased in conjunction with the right-of-way purchase of the overall roadway improvement.



R	Residential Areas	BP	Existing Bicycle Trails	G	Government Offices
P	Parks	PBP	Planned Bicycle Trails	B	Local Businesses
P	Recreational Areas	M	Shopping Centers	I	Industrial Plants
C	Churches	H	Hospitals	T	Public Transit Facilities
S	Schools	E	Employment Centers	O	Other

EXAMPLE OF MAP TO ACCOMPANY CHECKLIST FOR BICYCLE TRAVEL

Figure 17-1B

Organization	Yes	NA	Organizations*	Yes	NA
Metropolitan Planning Organization (if applicable)	☐	☐	League of Illinois Bicyclists*	☐	☐
Local Municipalities	☐	☐	Illinois Department of Natural Resources*	☐	☐
Park or Forest Preserve Districts	☐	☐	Illinois Trails Conservancy*	☐	☐
Sub-Regional Planning Council (as appropriate)	☐	☐	Chicagoland Bicycle Federation (District 1 only)*	☐	☐

**Note: Addresses are presented in Section 17-5.*

CHECKLIST FOR ORGANIZATIONS AND PUBLIC COORDINATION

Figure 17-1C

17-1.07 Funding

Bicycle facilities intended for transportation purposes, which are necessary for the safe travel of bicyclists within an improvement corridor, are considered an integral part of a highway project for Federal funding purposes, and thus are eligible for Federal cost participation. If conditions within the roadway prohibit the inclusion of adequate bicycle accommodation, necessary off-roadway accommodations may be included within the overall improvement cost-sharing formula.

Accommodations beyond those which are determined necessary from the travel demand analysis in Section 17-1.04, but may be desired or preferred by local officials, could be funded through several options as follows:

- initiated by others than IDOT and submitted as a candidate for the Transportation Enhancement Program funding (see Chapter 18);

- initiated by others than IDOT and submitted for consideration from other appropriate TEA-21 funding categories, such as the Congestion Mitigation and Air Quality (CMAQ) or various Surface Transportation Program (STP) categories;

- considered on a cost-shared basis, similar to the current IDOT sidewalk policy; or initiated by others than IDOT and funded entirely through outside governmental organizations.

Route _____
Section _____
County _____

1) Where would bicyclists cross the project?	
2) Where would bicyclists need to ride parallel to the project?	
3) Does the project provide unique or primary access (see Note 1): • Across a river, railroad, highway corridor or other natural or man-made barrier?	
• Into or out of a residential or commercial development?	
• Between communities or other likely significant destinations — such as a university campus or recreation facility?	
4) Are there any secondary roads parallel to the project that could reasonably be used by cyclists as alternates to access these destinations (see Note 2)?	
If so, how far from the corridor are these roads? (A key consideration with parallel roads is whether there are significant destinations located on the project corridor that bicyclists would need to access.)	
5) Do local governmental entities or other organizations have plans for bicycle facilities or generators, such as a park or recreational area that could affect this project or generate additional travel in the project corridor?	

Notes:

1. *Unique or primary access is defined as access that is not otherwise available within a reasonable riding distance of 1 mile (2 km).*

2. *Secondary roads that could be used as alternate routes are usually within 2-3 blocks of projects in urban areas, within 0.5 miles (1 km) in suburban areas, and within 1 mile (2 km) in rural areas.*

FORM FOR BICYCLE TRAVEL ASSESSMENT

Figure 17-1D

17-2 DESIGN CRITERIA FOR BICYCLE FACILITIES

The Department utilizes the AASHTO publication *Guide for the Development of Bicycle Facilities* as the basis for design guidance. Further guidance is provided in the FHWA publication *Selecting Roadway Design Treatments to Accommodate Bicycles.* Also, coordinate bicycle facility design with the cross section criteria presented in Part IV, "Roadway Design Elements," (Chapter 39) and Part V, "Design of Highway Types."

17-2.01 On-Road Accommodations

17-2.01(a) On-Road Bikeways on Rural Roadways

Bicycle accommodation on rural cross sections consists of paving a portion of the shoulder. Paved shoulders can accommodate most types of bicycle travel very efficiently and offer benefits beyond accommodating bicyclists (e.g., added safety, reduced maintenance, rural mail delivery). See Figure 17-2A for width criteria.

Vehicular ADT (current)	Bicycle ADT ≥ 25 (projected) [1]
Under 1000	1 ft (300 mm) [2]
1000 to 2999	4 ft (1.2 m)
3000 or more	4ft – 6 ft (1.2 m - 1.8 m) [3]

Notes:

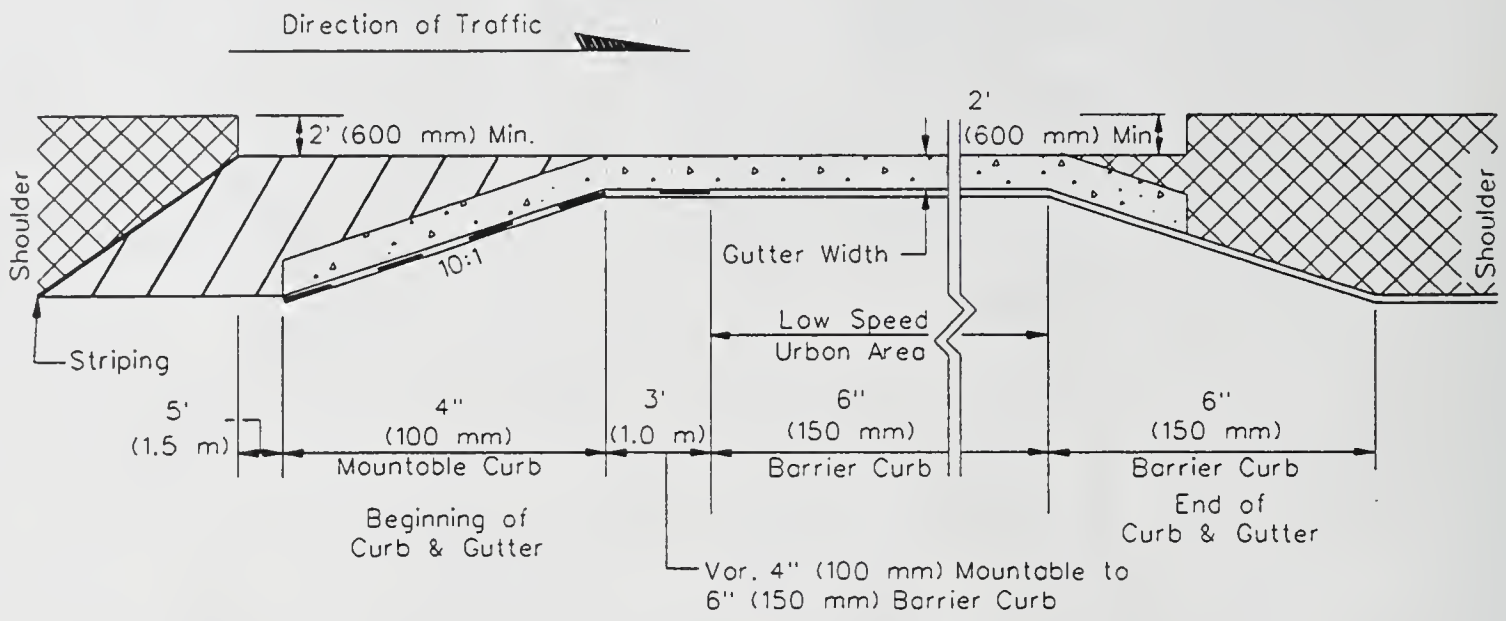
1. *Estimate bicycle ADT according to Section 17-1.04.*
2. *This value reflects 3R criteria.*
3. *Paved shoulder width should be increased to 6 ft (1.8 m) as follows:*
   - *where posted speeds are 55 mph or greater, or*
   - *where posted speeds equal or exceed 45 mph in areas with high truck, RV, or bus traffic or where usage by inexperienced bicyclists is expected.*

Where rumble strips are used, the paved shoulder should be sufficiently wide to provide a minimum 3 ft (1 m) smooth width to the outside of the rumble strip.

MINIMUM PAVED SHOULDER WIDTHS TO ACCOMMODATE BICYCLES ON RURAL CROSS SECTIONS

Figure 17-2A

Transitions from rural sections into urban sections (e.g., driveway entrances, intersections) should accommodate bicyclists' through movements by providing additional curb lane width to the curb and gutter section. Figure 17-2B illustrates an acceptable approach.



PAVED SHOULDER TRANSITION INTO CURB AND GUTTER

Figure 17-2B

Avoid using rumble strips on shoulders where bicycles are allowed to operate (see Chapter 34). When rumble strips are warranted to address a high-crash location or a history of run-off-the-road crashes, and there is a need to accommodate bicycle travel, provide a minimum 3 ft (900 mm) smooth paved area to the outside of the rumble strip as per the *Highway Standards.* The design should be coordinated with and approved by BDE.

17-2.01(b) On-Road Bikeways On Shared Urban Roadways

On a shared roadway facility, bicyclists and motorists share the same travel lanes without a striped separation. Minimum cross sections are shown in Figure 17-2C. Shared roadways have particular application where physical constraints such as buildings, narrow sidewalks, or environmentally sensitive areas prevent widening a street to provide bike lanes.

Wide curb lanes usually are the most effective and efficient means of accommodating bicycle travel in urban roadway sections. The width of the lane is the most important factor for allowing vehicles sufficient room to pass a slower-moving bicyclist. As speeds increase or as the percentage of truck traffic increases, the width should increase according to the criteria presented in Figure 17-2C. Measure the width of the lane from the lane stripe to the joint between the pavement and the gutter. If no joint exists, as with monolithic pavement, take the measurement to the face of the curb. Bicycles, because of their narrow tires, cannot be expected to be ridden on or near a longitudinal pavement joint because of the potential for catching the wheel in the joint and throwing a rider into traffic.

TWO-LANE ROADWAYS WITH WIDE LANES
(Posted Speed < 45 mph)

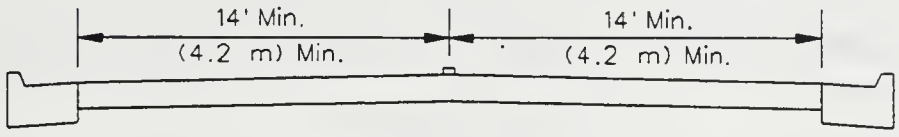


Curb and Gutter Section



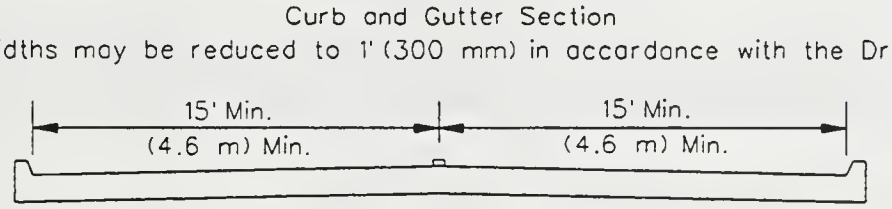
Manolithic Curb and Gutter Section
(Existing Roadway Only)

TWO-LANE ROADWAYS WITH WIDE LANES
(Posted Speed = 45 mph)



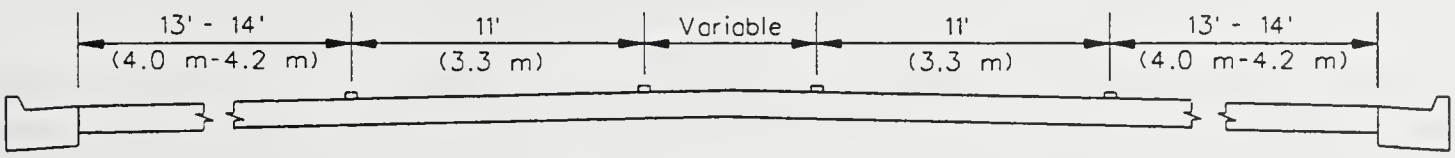
Curb and Gutter Section

Note: Gutter widths may be reduced to 1' (300 mm) in accordance with the Drainage Manual.

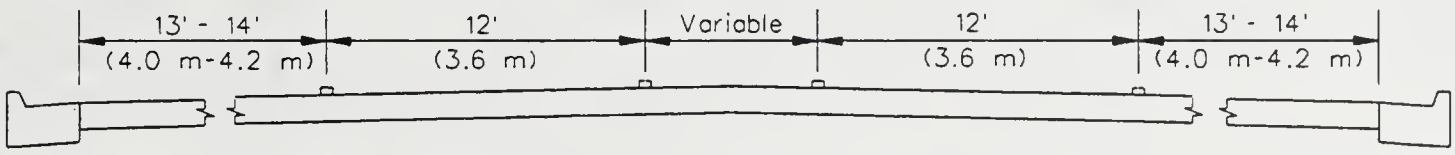


Manolithic Curb and Gutter Section

FIVE-LANE SECTIONS



Section with Differentiol Striping



Section with 12' (3.6-m) Inside Lanes and Widened Curb Lanes

MINIMUM CROSS SECTIONS FOR SHARED URBAN ROADWAYS
(Unmarked Bicycle Lanes)
Figure 17-2C

Gutter widths are not considered acceptable for bicycle travel. A bicyclist riding in the gutter is often forced to leave this area because of debris or broken pavement. If the pavement/gutter joint is vertically uneven or has separated from the gutter, a bicyclist can become trapped and forced to make unsafe maneuvers.

17-2.01(c) On-Road Marked Bicycle Lanes on Urban Roadways

Bicycle lanes that are marked on curbed streets serve to separate bicycle traffic from motor vehicle traffic. The provision of marked bike lanes may be considered appropriate if any of the following conditions exist:

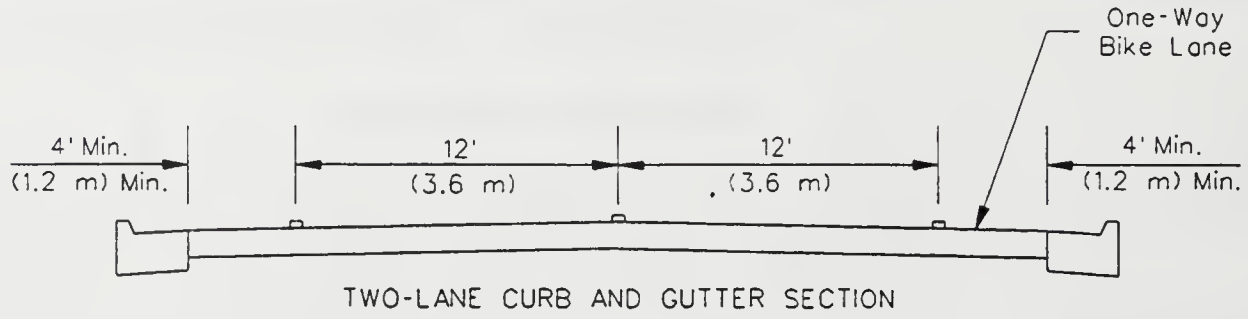
- A combination of speeds (i.e., posted 45 mph or less) and high vehicular traffic volumes exist, especially on roadways with high truck, RV, or bus traffic (refer also to *Selecting Roadway Design Treatments to Accommodate Bicycles*).

- The bicycle lanes provide a linkage to a continued marked bikeway along or at either end of the project.

- The roadway provides a key linkage to a destination, such as a college or recreational area, which will be frequented by casual bicyclists.

The following are minimum cross section requirements:

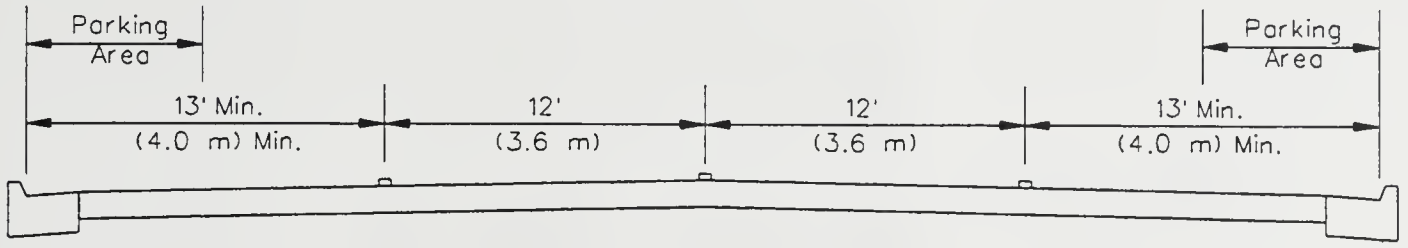
- On curbed streets without parking, locate the bicycle lane next to the gutter, as shown in Figure 17-2D.



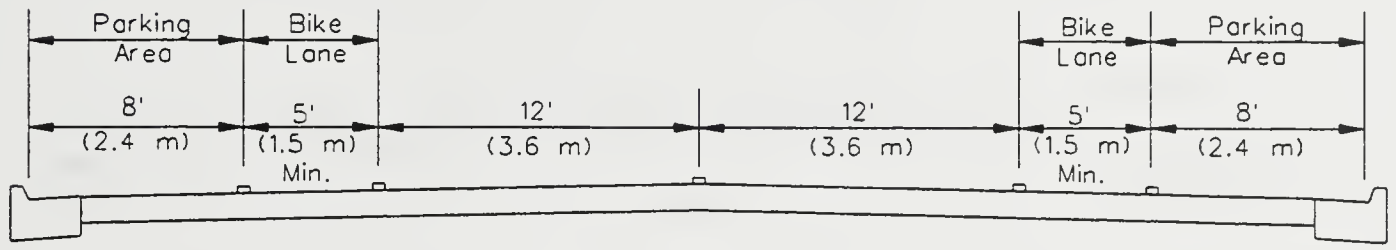
MINIMUM CROSS SECTIONS FOR CURBED STREETS WITHOUT PARKING
(Marked Bicycle Lanes)

Figure 17-2D

- Where parking is permitted, locate the bicycle lane between the parking lane and the through traffic lanes as shown in Figure 17-2E.



TWO-LANE SECTION WITH
COMBINED BICYCLE AND PARKING USE AREAS
(Unmarked Bicycle Use Area)



TWO-LANE SECTION WITH
MARKED PARKING
(Marked Bicycle Lanes)

MINIMUM CROSS SECTIONS FOR CURBED STREETS WITH PARKING

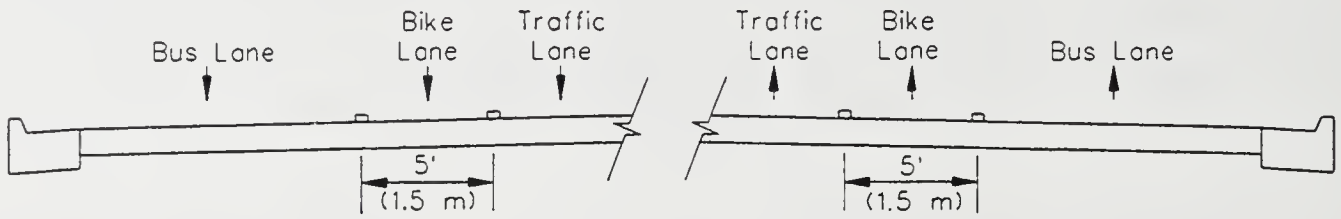
Figure 17-2E

- Where parking is allowed on a street, provide additional parking-lane width, above the required minimum, under the following conditions:

  + where there is frequent parking turnover,
  + where parked vehicles are mostly commercial vehicles, or
  + where posted motor vehicle speeds equal 45 mph.

Design bicycle lanes as one-way facilities that carry bicycle traffic in the same direction as adjacent motor vehicle traffic. Two-way bicycle lanes on one side of the roadway (without physical separation) are unacceptable because they promote riding against the flow of motor vehicle traffic. Wrong-way riding is a major cause of bicycle crashes nationally and violates the *Illinois Vehicle Code* (625 ILCS 5/11-1505). Locate one-way bicycle lanes that are on one-way streets on the right side of the street, except in areas where placing the bicycle lane on the left will decrease the number of conflicts (e.g., those caused by heavy bus traffic).

Place bicycle lanes that are adjacent to dedicated bus lanes between the vehicular traffic lane and the bus lane as shown in Figure 17-2F. Where roadway width is limited, bicycles and buses may share an outside lane with a minimum width of 16.5 ft (5 m) to the curb face.



BICYCLE LANES ADJACENT TO BUS LANES

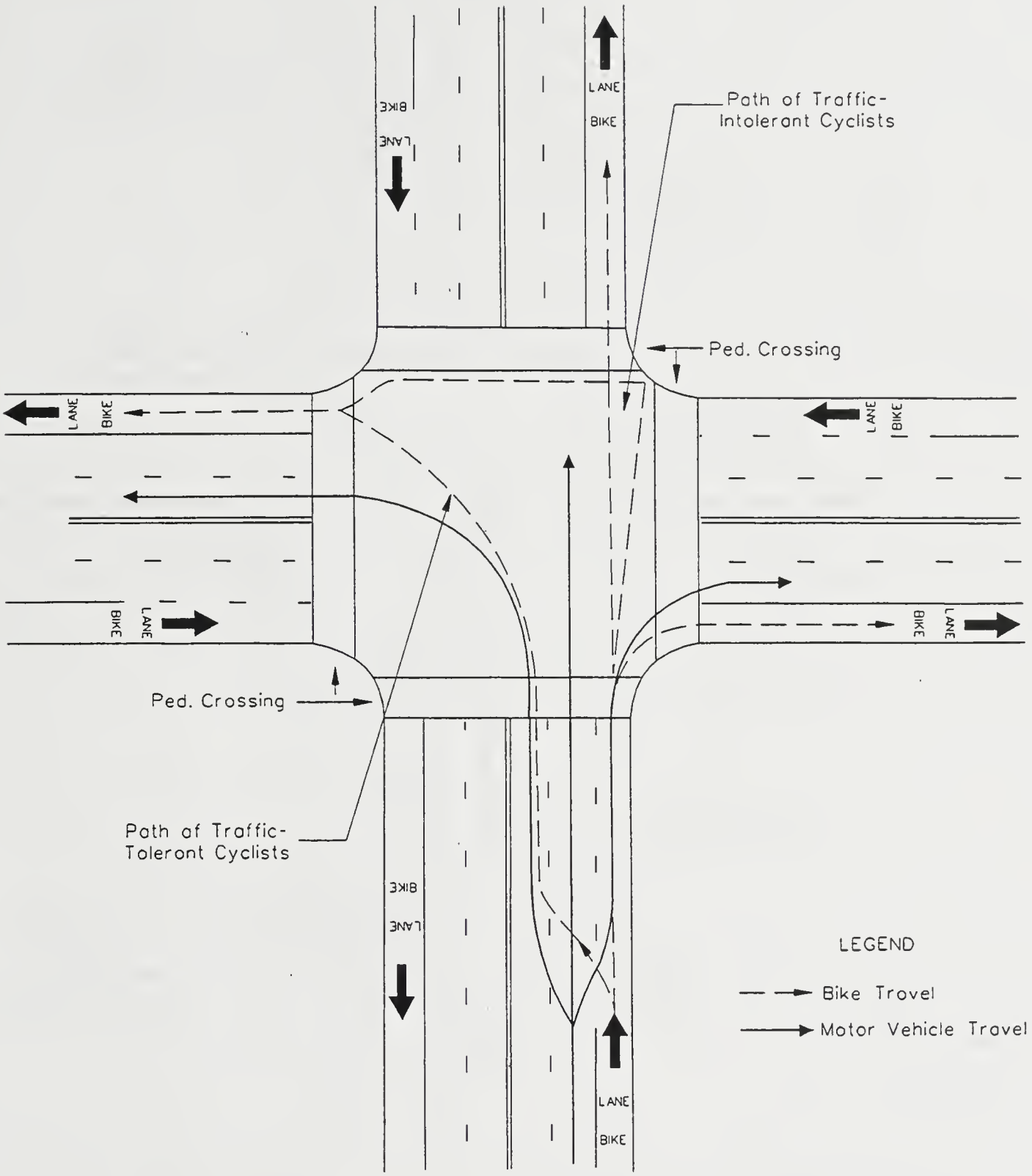
Figure 17-2F

17-2.01(d) Intersections

On-road bicycle movements through intersections should be an integral part of a roadway improvement. As practical, continue existing wide curb lanes through intersections to accommodate bicycle through movements. If right- or left-turn bicycle movements are expected, provide adequate turn-lane widths to allow bicyclists to share the lane with turning vehicular traffic. When an approach roadway in a rural section transitions into an urban intersection, use the criteria presented in Section 17-2.01(a).

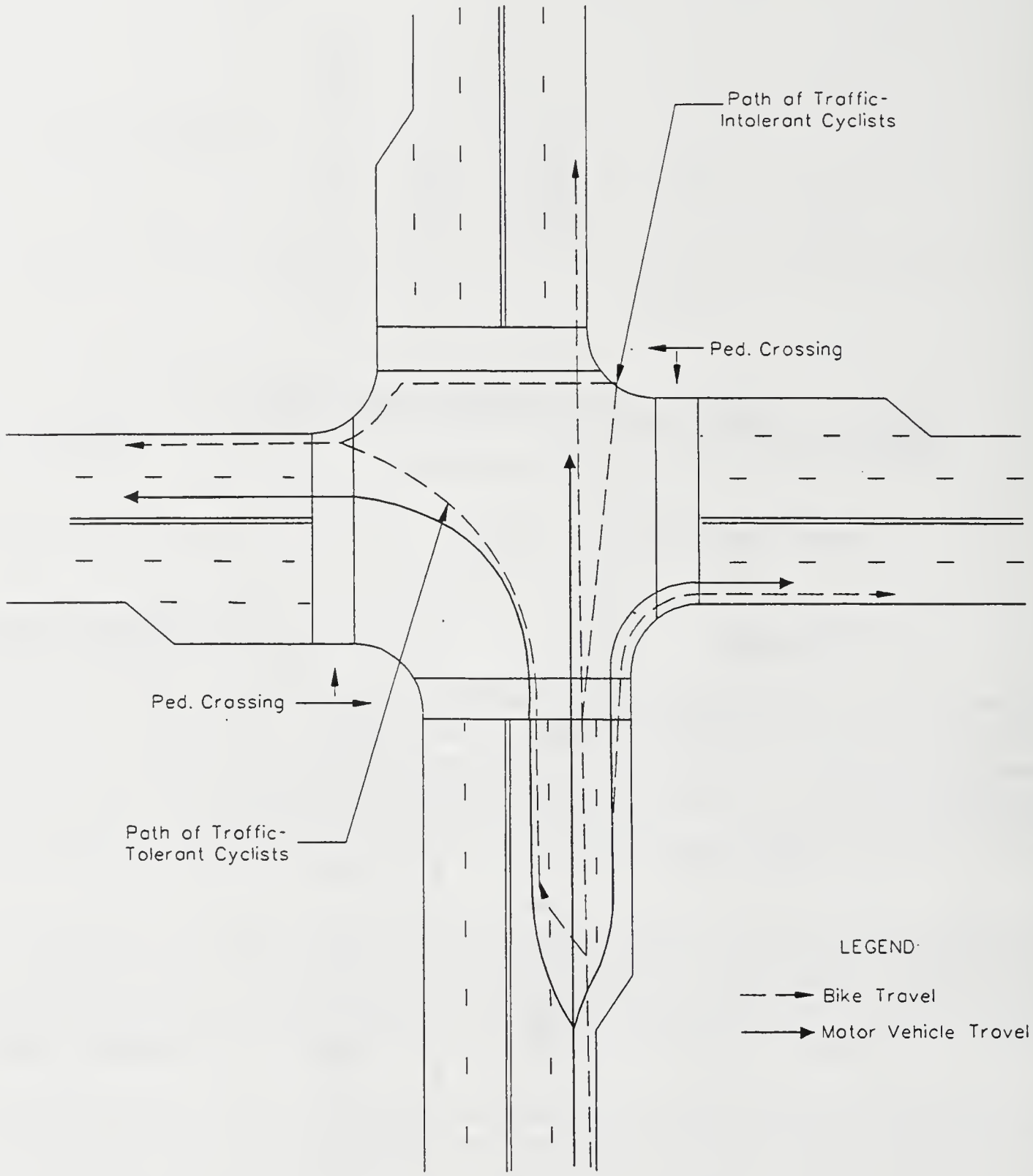
Bicycle lanes on an intersection approach should be continued through the intersection as shown in Figure 17-2G. When width for a separate lane is unavailable, actual bicycle movements are likely to follow those shown in Figure 17-2H. Traffic-tolerant cyclists will generally mimic vehicular movements and traffic-intolerant cyclists will generally mimic pedestrian movements.

Different approaches to accommodating bicycle traffic through intersections are necessary as the level of vehicular traffic and speeds through the intersection increase. Accommodating bicyclists through a free-flow interchange may be of concern, due to possible safety issues; consider providing a separate structure for bicyclists and pedestrians. However, if on-road accommodation is necessary, the design shown in Figure 17-2I reflects an acceptable approach to directing bicyclists across interchanges. Other designs may need to be considered to meet the requirements of individual intersections/interchanges.



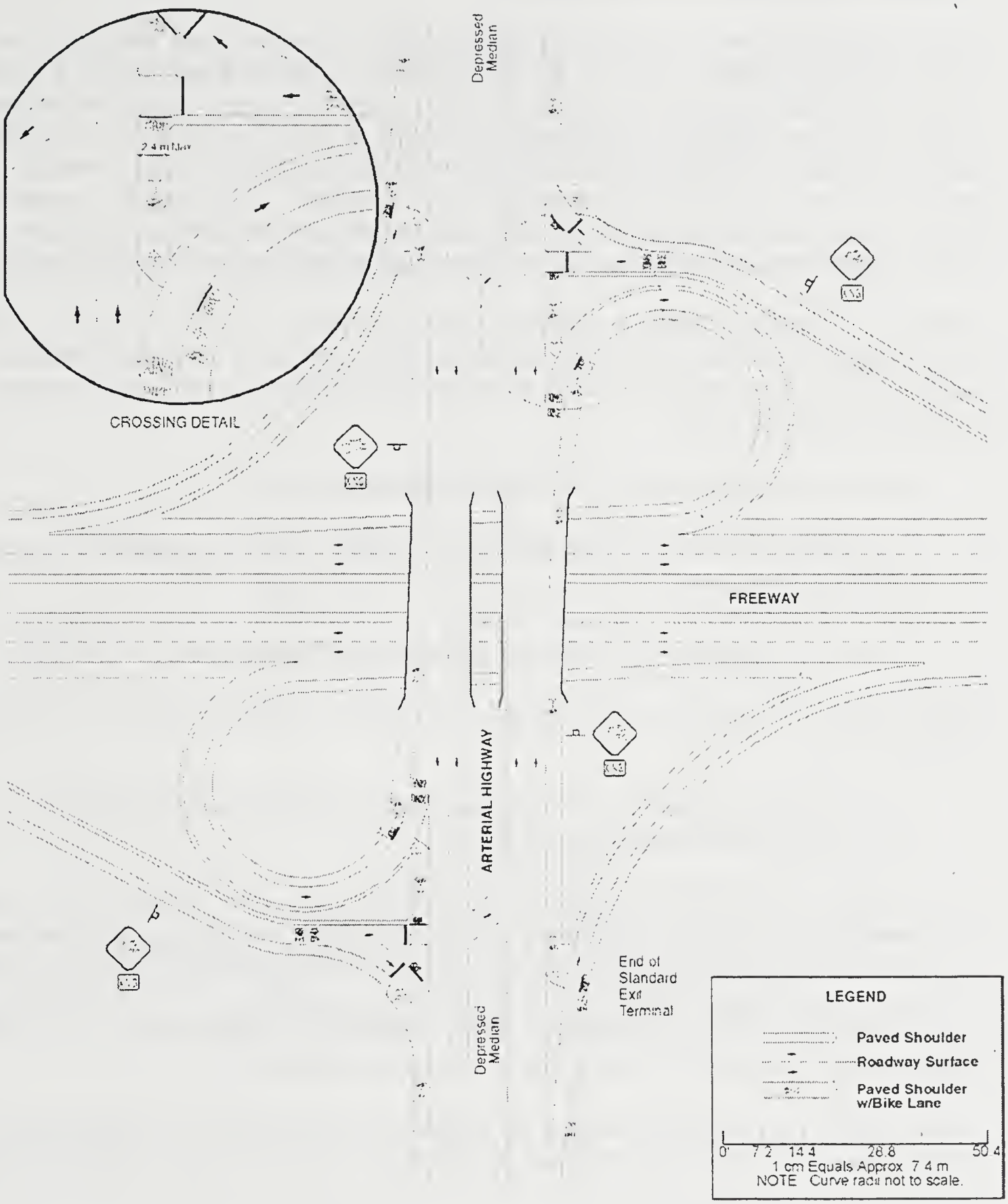
TYPICAL BICYCLE MOVEMENTS AT INTERSECTIONS ON MULTI-LANE STREETS WITH BICYCLE LANES

Figure 17-2G



TYPICAL BICYCLE MOVEMENTS AT INTERSECTIONS ON MULTI-LANE STREETS WITHOUT BICYCLE LANES

Figure 17-2H



BIKE LANES ACROSS HIGHER SPEED INTERCHANGES

Figure 17-2I

17-2.01(e) Bikeway on Highway Structures

Bicycle accommodations on approach roadways should be carried across structures. The width of new highway structures should, at a minimum, equal the width of the traveled way plus the width of approaching bicycle lanes and/or sidewalks. Minimum cross sections for roadways and structures will vary significantly depending on the type of bicycle facility being accommodated. Several examples of minimum cross sections for shared roadways, bicycle lanes and bicycle paths are shown in Figures 17-2J through 17-2L. In addition, the criteria for accommodating bikeways at or near bridges along freeways and expressways are illustrated in Figure 17-2M. Figure 17-2N presents a typical modification of existing facilities for bikeways under a bridge.

Where it is necessary to retrofit a separated bicycle path (see Section 17-2.02) onto an existing highway bridge, several alternatives should be considered in light of what the geometrics of the bridge will allow. One option is to carry the bicycle path across one side of the structure. This should be considered where:

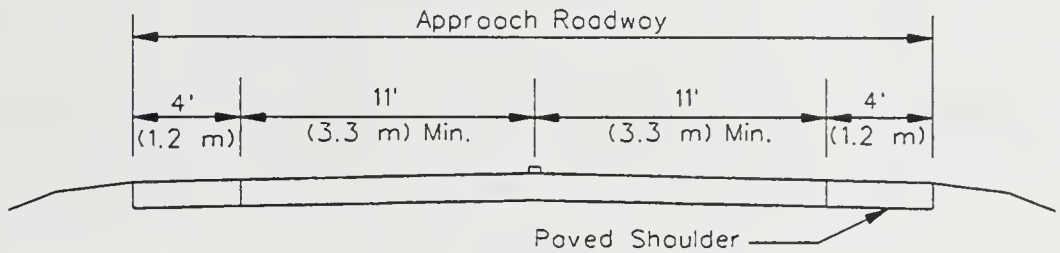
- the bridge facility will connect to a bicycle path at both ends,
- sufficient width exists on that side of the bridge or can be obtained by widening or restriping lanes, and
- provisions are made to physically separate bicycle traffic from motor vehicle traffic.

Another option is to use existing sidewalks as one-way or two-way facilities. This may be advisable where:

- conflicts between bicyclists and pedestrians will not exceed tolerable limits, and
- the existing sidewalks are adequately wide.

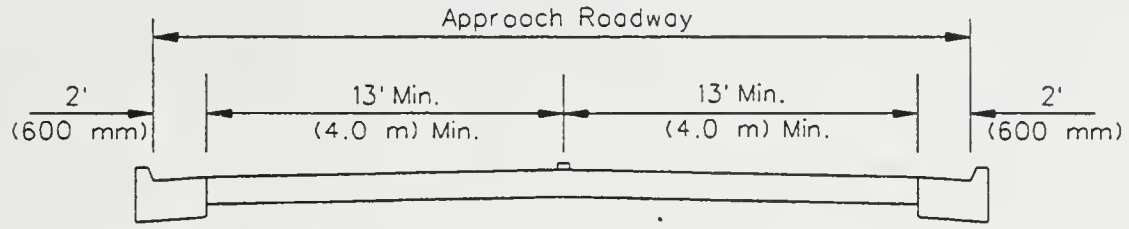
If the facility cannot provide adequate accommodation (per widths indicated in this section), appropriately sign the facility to warn users of the deficiencies or require bicyclists to dismount and cross the structure as a pedestrian. Section 17-2.02(i) provides additional design guidance for structures on bicycle paths. The AASHTO *Bridge Manual* specifies a 4′-6″ (1.4 m) outside railing height. Design on-road bicycle accommodations accordingly. Bridge railing on off-road-shared-use paths must meet a 3′-6″ (1.1 m) minimum rail height requirement.

Where bridge projects include bikeway or sidewalk accommodations, the approaches to the structure should ensure a usable facility by continuing the accommodation to logical termini.

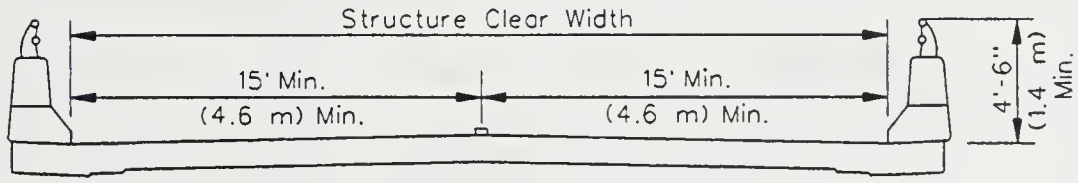


TWO-LANE ROADWAY WITH PAVED SHOULDERS

Note: Shoulder width should be increased to 6' (1.8 m) with conditions indicated in Figure 17-2A.



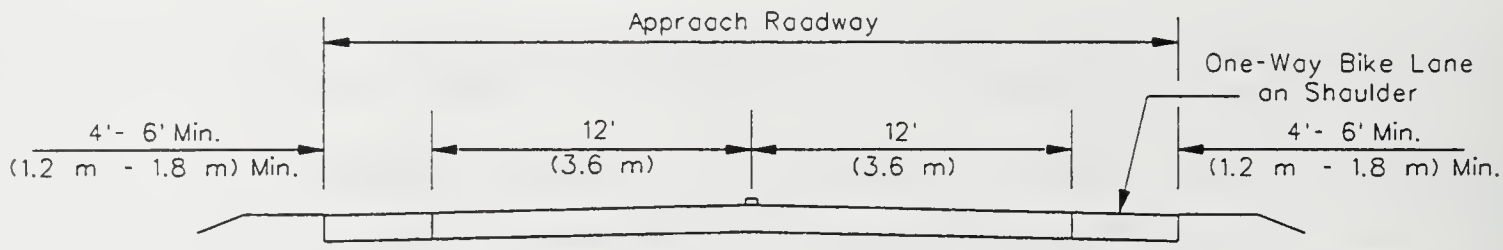
TWO-LANE URBAN ROADWAY WITH WIDE LANES



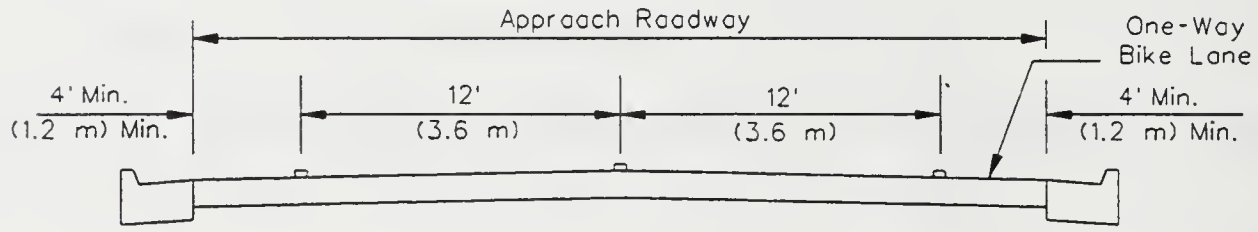
WIDE LANES/SHOULDERS CONTINUED ACROSS STRUCTURE

CROSS SECTIONS FOR SHARED ROADWAY ON TWO-LANE HIGHWAY STRUCTURES (Unmarked Bicycle Lanes)

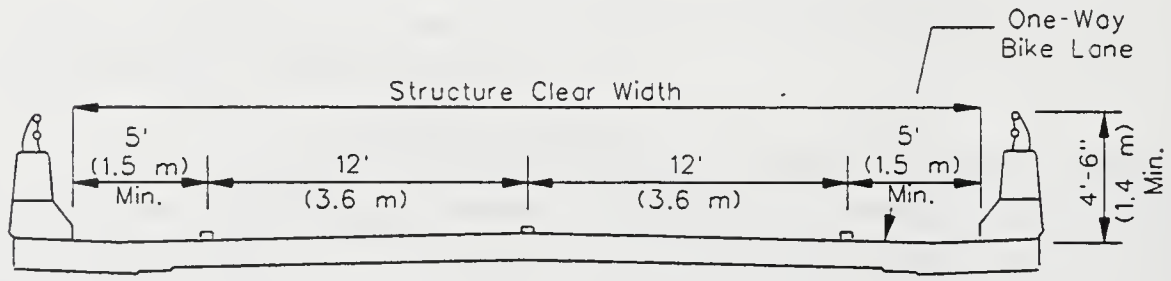
Figure 17-2J



BIKE LANES ON SHOULDERS



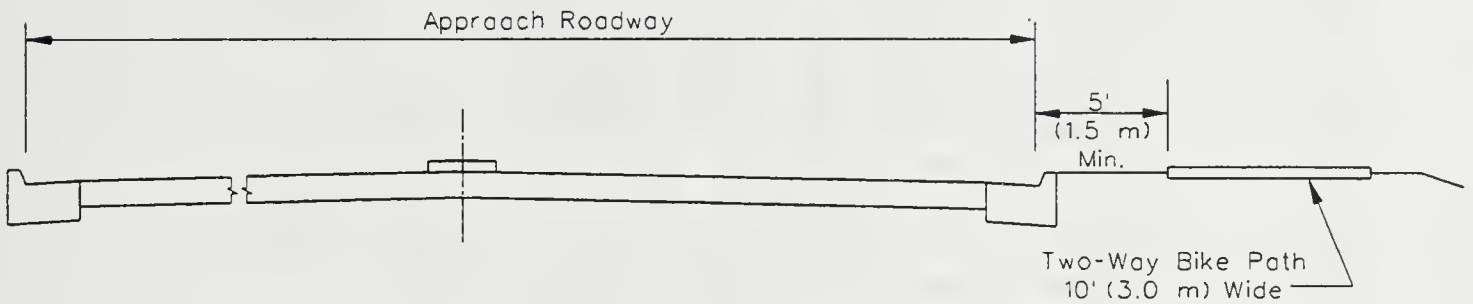
BIKE LANES ON ROADWAY



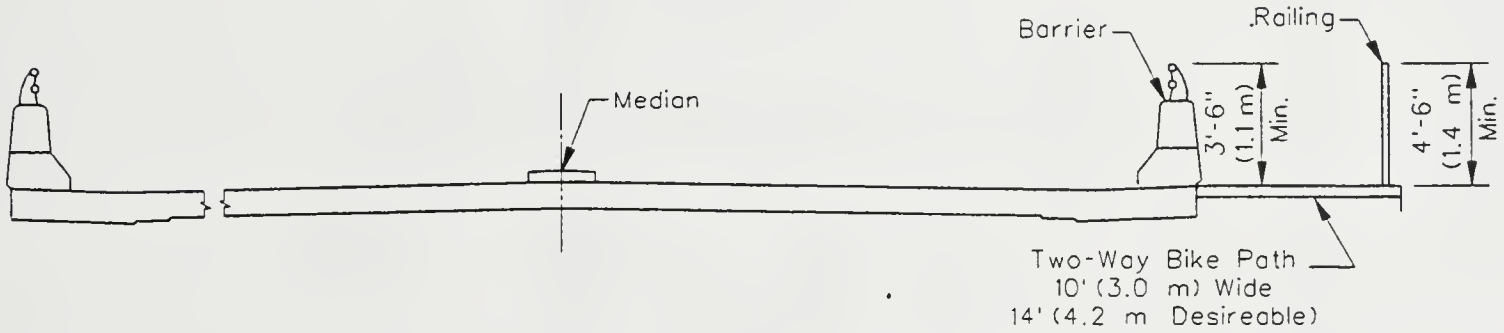
BIKE LANES ACROSS STRUCTURE

CROSS SECTIONS FOR MARKED BIKE LANES ON TWO-LANE HIGHWAY STRUCTURES

Figure 17-2K



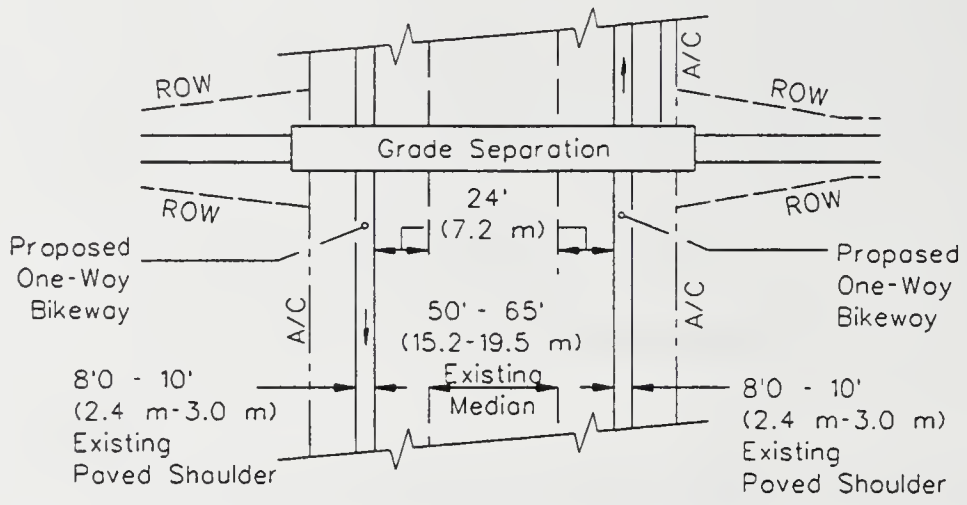
APPROACHING FOUR-LANE SECTION
WITH ADJACENT TWO-WAY BIKE PATH



FOUR-LANE SECTION CONTINUED ACROSS
BRIDGE WITH INTEGRAL BIKE PATH

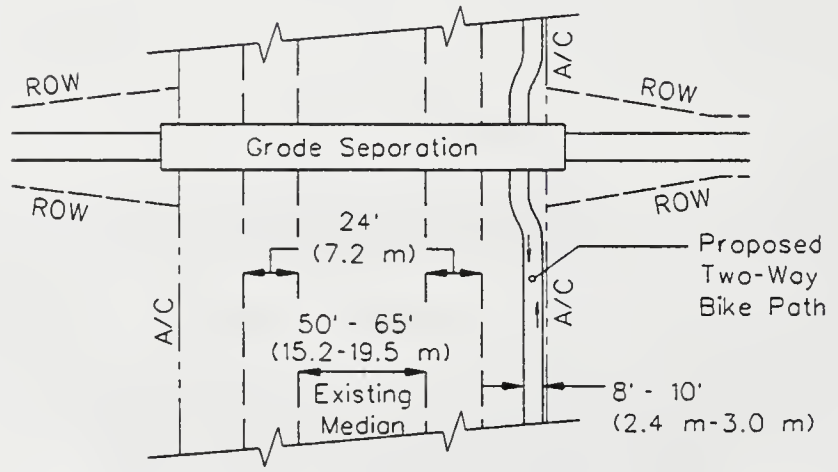
CROSS SECTIONS FOR BIKE PATHS ON FOUR-LANE HIGHWAY STRUCTURES

Figure 17-2L



PLAN VIEW OF ONE-WAY BIKEWAY UNDER BRIDGE

(Note: Typical layout of one-way bikeway using outside shoulders of on expressway or freeway.)

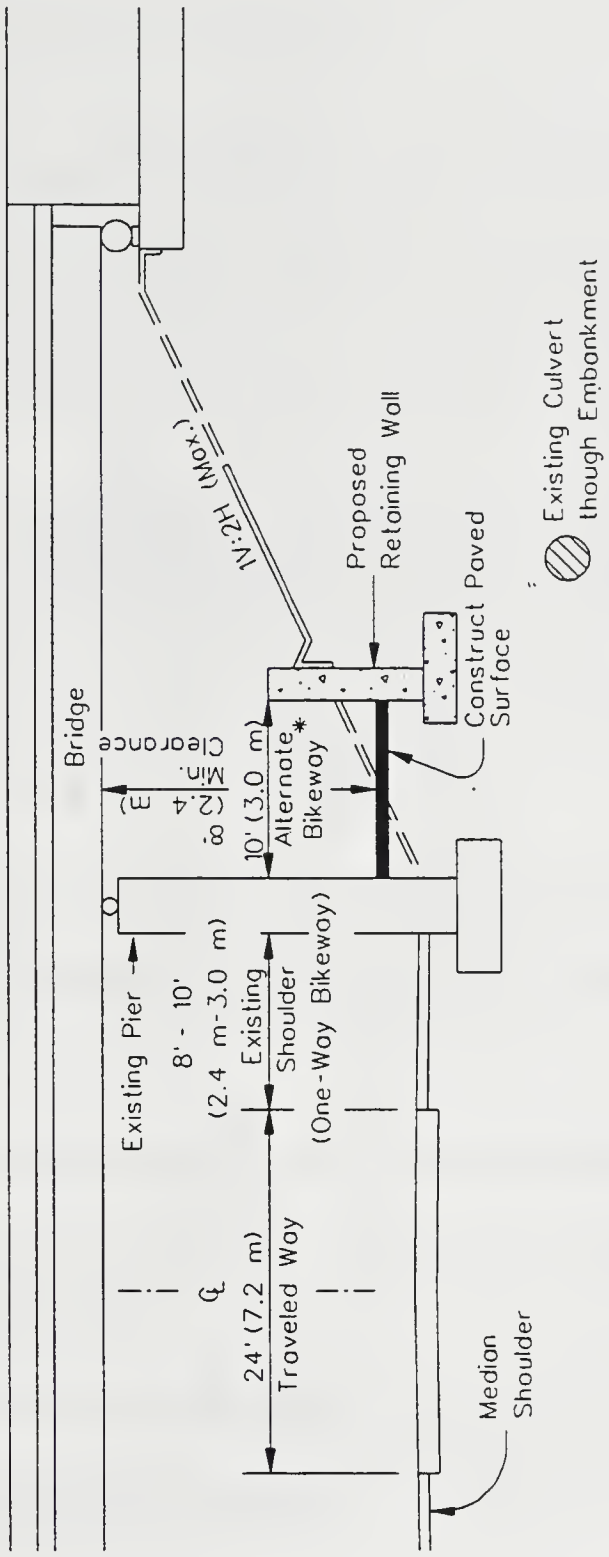


PLAN VIEW OF TWO-WAY BIKE PATH UNDER BRIDGE

(Note: Typical layout of two-way bike path adjacent to ROW line of an expressway or freeway.)

BIKEWAYS AT OR NEAR BRIDGES ALONG FREEWAYS OR EXPRESSWAYS

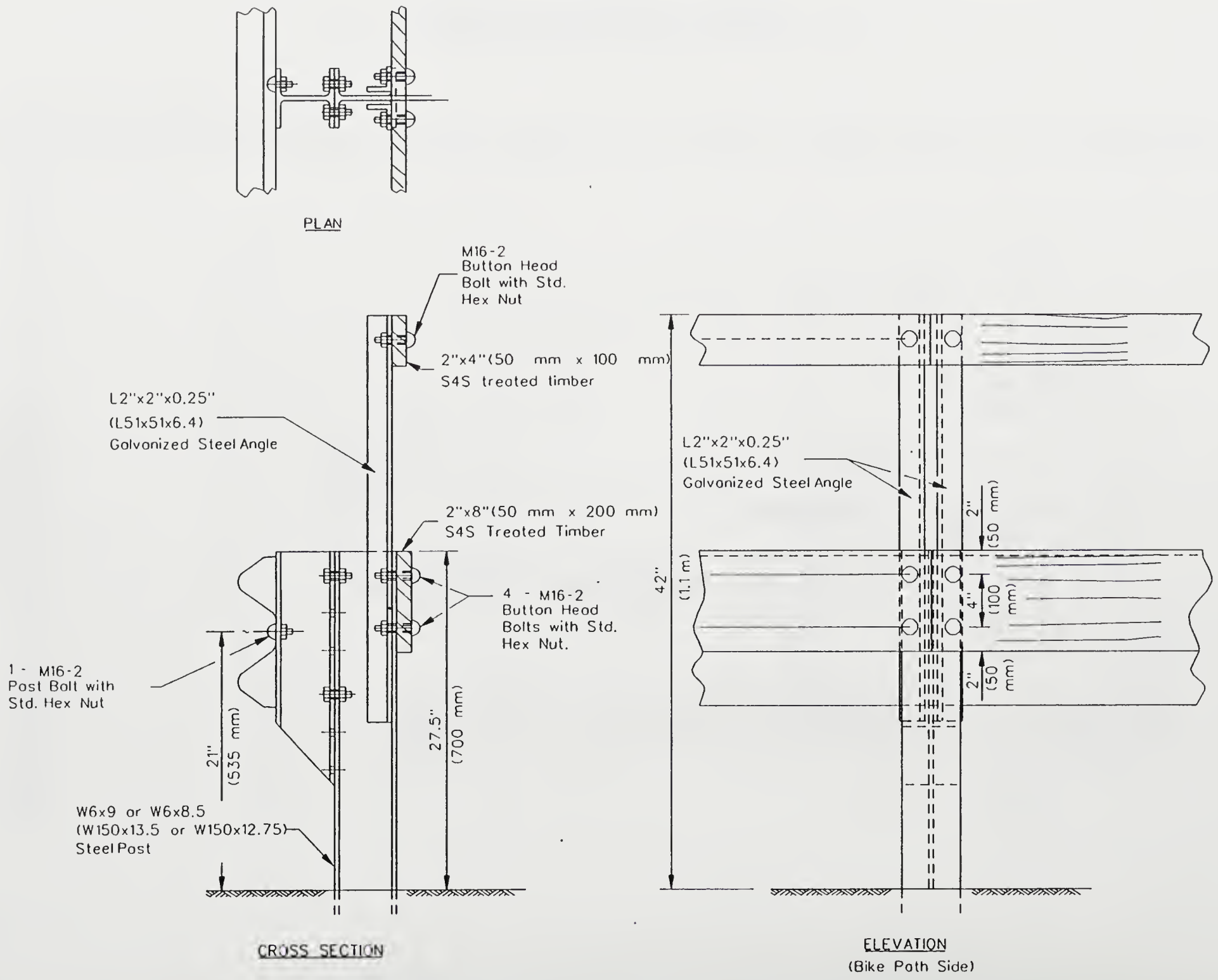
Figure 17-2M



*Note: *Alternate bikeway is considered under bridge where separate two-way bike path is proposed within or adjacent to existing right-of-way line of a freeway or expressway.*

TYPICAL MODIFICATION OF EXISTING FACILITIES FOR BIKEWAYS UNDER A BRIDGE

Figure 17-2N



BIKE PATH APPROACH GUARDRAIL ADJUSTMENT

Figure 17-20

17-2.01(f) Bikeway Adjacent to Highways

Railings or barriers, 3.5 ft (1.1 m) high, are required wherever a two-way bike path is proposed within 5 ft (1.5 m) of a roadway. In addition, approach guardrails should be extended to a 3.5 ft (1.1 m) height until the bike path is more than 5 ft (1.5 m) from the edge of the traveled way. The requisite extension on a standard guardrail to extend its height to 3.5 ft (1.1 m) is shown in Figure 17-2O. The width of the two-way bike path generally should be 10 ft (3.0 m), but widths should be adjusted according to Figure 17-2X in Section 17-2.02(d). Separation railings are not required when bicycle traffic flows in the same direction as vehicular traffic.

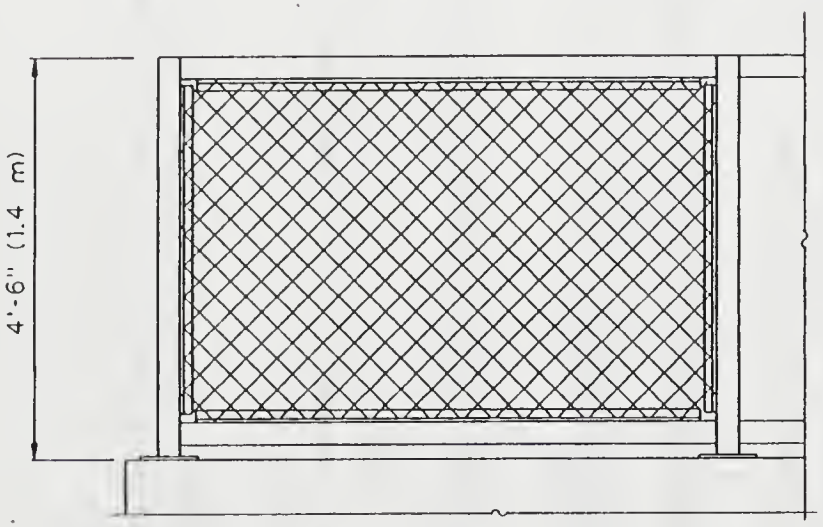
Railings and barriers that provide a separation between the roadway and a bike path are primarily intended to prevent the bicyclist from falling over the railing into opposing traffic. Thus, the type of railing provided is dependent on its proximity to vehicular traffic and its ability to deflect vehicular impacts. For example, railings located on top of a raised sidewalk edge will require an impact resistance different than railings located adjacent to the traffic lane. The designer of the railing also should consider sight impediments the railing might impose. Examples of such railings are shown in Figure 17-2P.

All vertical surfaces within a 2 ft (600 mm) clear area adjacent to the bicyclists' path should be smooth to avoid snagging of clothing or incurring abrasive injuries from contact with the surface. For example, protect the sharp edges of the backside of a guardrail located within 2 ft (600 mm) of the edge of a bikeway by smooth planking or rub rail as shown in Figure 17-2Q.

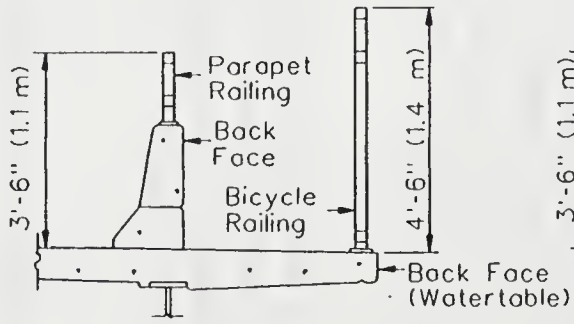
17-2.01(g) Additional Considerations for Accommodations on Existing Roadways

Bicycles also can be accommodated on a roadway by marking or re-marking the pavement to increase the width of the curb lane or to add bike lanes. For example, it may be feasible to:

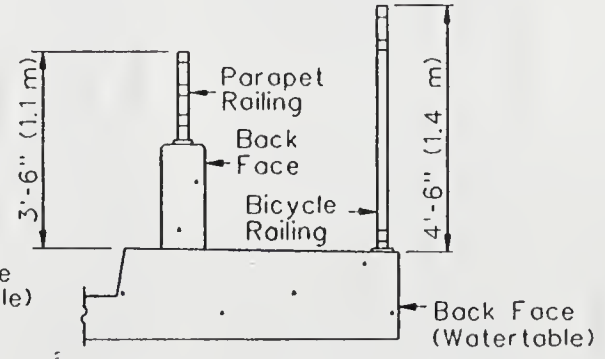
- reduce the width of inside traffic lanes in accordance with IDOT and AASHTO criteria;
- reduce the median width, especially with the removal of raised curb medians, or the two-way center turn lane width;
- remove parking, possibly in conjunction with providing off-street parking;
- reduce the number of traffic lanes (e.g., if one-way couples are created or if a parallel roadway improvement reduces the traffic demand on an adjacent street that is more suited for bicycle travel); and
- where grades for on-road bicycle facilities exceed bike path grades in Figure 17-2AF, consider using signs to alert bicyclists of upcoming grades.



BICYCLE RAILING



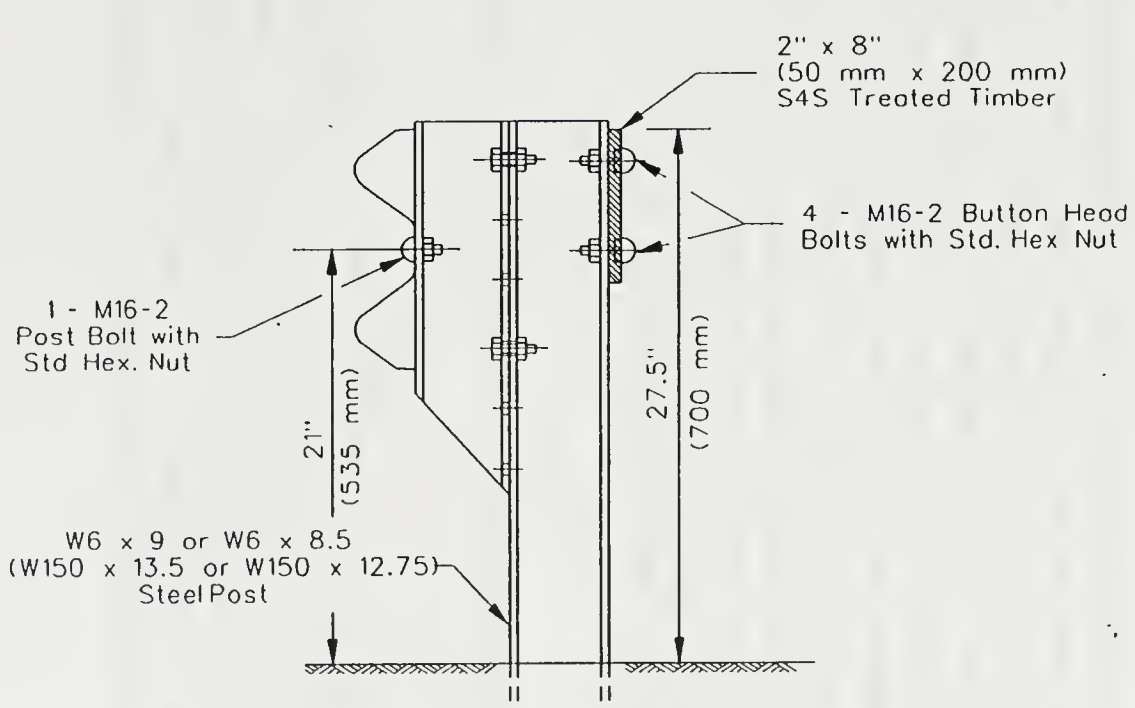
SECTION THRU DECK

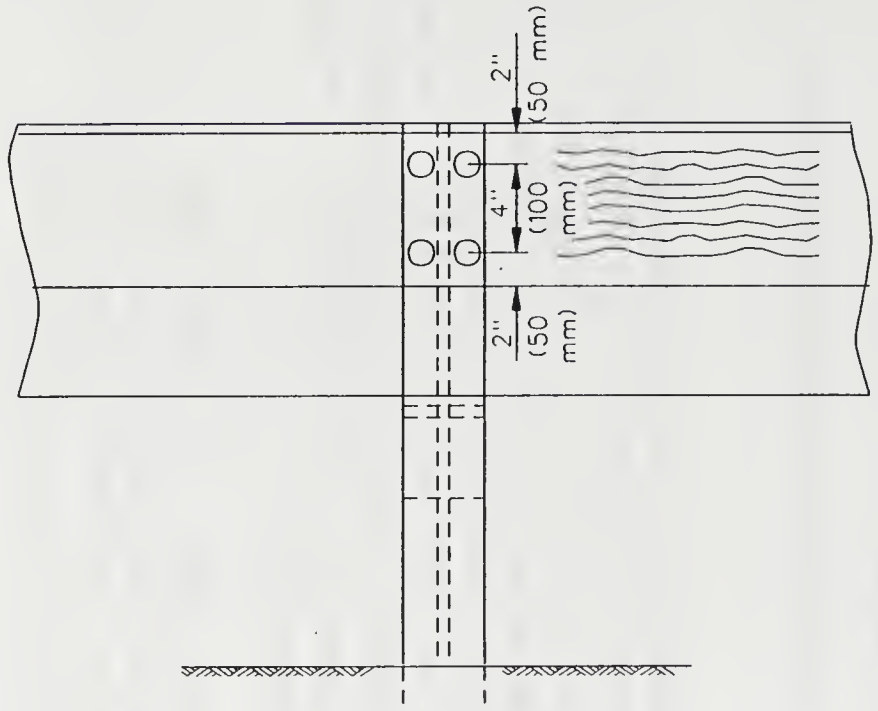


SECTION THRU SIDEWALK

BICYCLE RAILING

Figure 17-2P





PROTECTION OF BACKSIDE OF GUARDRAIL

Figure 17-2Q

17-2.01(h) Incidental Design Factors

Regardless of the type of improvement being developed, the following items always should be considered:

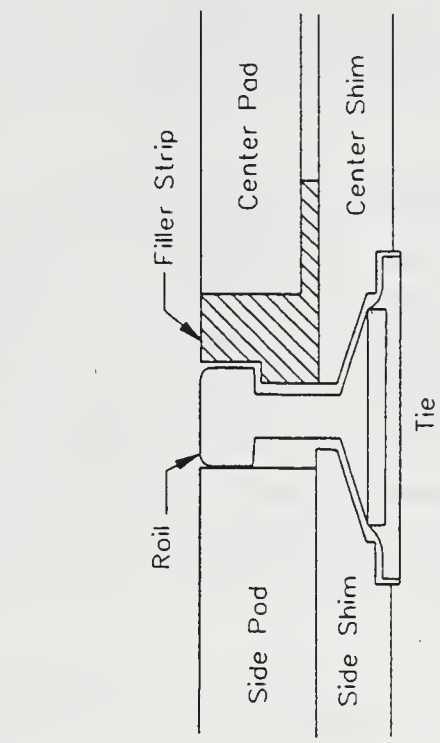
1. Drainage Grates. Drainage grates and utility covers on roads, bridge approaches, and bridges can be hazardous to bicyclists. Bicycles often have narrow tires and no shock absorbent systems, and therefore are more sensitive to older elongated-slot style drainage inlets and irregularities on the pavement surface. Current IDOT drainage grate designs suitable for bicycle travel include Types 3, 3V, 4, 9, 10, 11, 11V, 23, and 24. Types 20, 21, and 22 are conditionally acceptable if the vane length is perpendicular to bicycle travel. Other grates are acceptable if the opening slots do not exceed 6¼″ L x 1½″ W. In addition, grates and utility covers located in the bicyclists' expected path should be flush with the pavement.

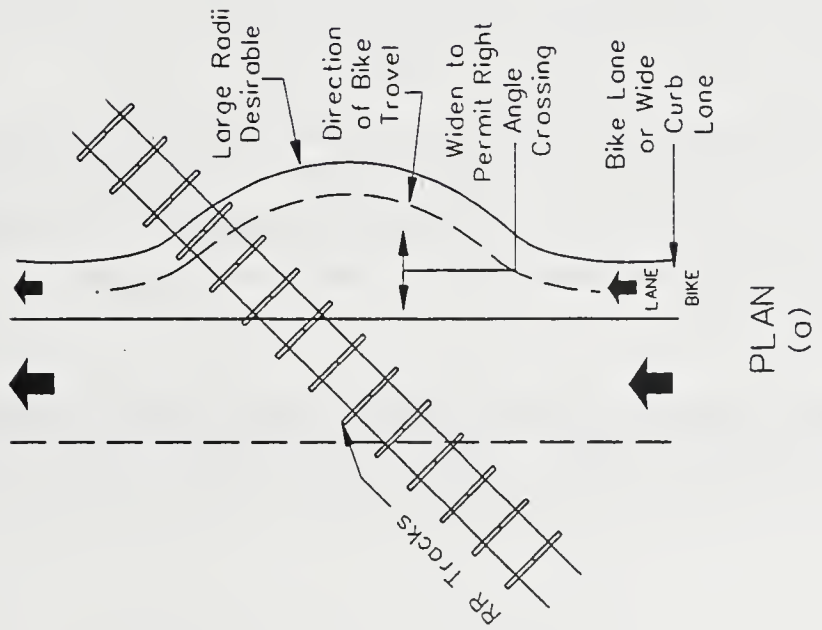
   With pavement overlay projects, replace utility covers and non-conforming drainage grates and adjust them flush with the new surface. Project limits may be extended within reasonable distances (i.e., one block or more) to replace additional non-conforming drainage grates that present obvious hazards to bicyclists.

2. Railroad Crossings. Bicyclists should be able to cross railroad tracks at or near a right angle to minimize the potential for a bicycle's front wheel to become trapped in the flangeway, which would cause loss of steering control. The potential for a bicyclist's front wheel to be trapped in the rail flangeway increases when the angle of approach deviates greatly (20 degrees) from 90 degrees. When the crossing angle is less than 45 degrees, consider widening the outside lane, shoulder, or bicycle lane to improve the angle of approach (see Figure 17-2R(a)). Where this is not practical, consider using commercially available compressible flangeway fillers, such as that shown in Figure 17-2R(b), to provide a smooth transition over the rails. Design the bicycle portion of the pavement surface so that it is the same elevation as the rails and consistent with the vehicular crossing surface. Remove abandoned tracks, if practical, to eliminate the hazard.

3. Pavement Structure Considerations. Consider the following factors related to pavement structures:

   a. Joints and Drop-Offs. In new construction, pavement surface irregularities can cause a bicyclist to lose control and result in a crash. Because bicycle tires may be as narrow as 1 in (25 mm), gaps between pavement slabs and gutters or drop-offs at overlays, especially parallel to the direction of travel, can trap a bicycle wheel and result in loss of control. This loss of control can cause a bicyclist to fall or swerve into the path of motor vehicle traffic. To the extent practical, pavement





BIKE LANE CROSSING WITH RAILROAD

Figure 17-2R

surfaces should be free of irregularities and the edge of the pavement should be uniform in width. To assure pavement suitability, overlay projects should consider options to scarify the old pavement up to the gutter edge.

b. Rumble Strips. Where rumble strips are placed across the traffic lane in rural areas to warn motorists of upcoming traffic controls, provide a 3 ft (1.0 m) clear paved area on the paved portion of the shoulder to allow a bicyclist an opportunity to avoid the rumble strip.

c. Surface Type. Many rural roadways, because of their low traffic volumes, are very conducive to bicycling. When selecting the surface type and maintenance methods, consider the impacts on bicycle use. Particularly with oil and chip (A2/A3) surfaces, the aggregate specified should be a coarse aggregate, preferably CA 16, and care should be exercised to ensure that the surface is properly rolled and swept. Any loose stone allowed to accumulate on the outer edges of the roadway is extremely hazardous as it forces bicyclists to move toward the center of the roadway to avoid the hazard.

17-2.01(i) Bicycle Routes

It may be advantageous to sign some urban and rural roadways as bicycle routes, particularly if certain roadways provide preferred alternatives to heavily traveled highways. When providing continuity to other bicycle facilities, a bicycle route can be relatively short; however, a bicycle touring route can be quite long.

Base the decision whether to provide a bicycle route on the advisability of encouraging bicycle use on a particular road instead of on parallel and adjacent highways. Consider the roadway width and other factors (e.g., volume, speed, type of traffic, parking conditions, grade, sight distance) when determining the feasibility of a bicycle route.

Generally, bicycle traffic cannot be diverted to a less direct alternative route unless the favorable factors outweigh the inconvenience to the bicyclist. Roadway conditions such as adequate pavement width, drainage grates, railroad crossings, pavement smoothness, work schedules, and signal responsiveness to bicycles always should be considered before a roadway is identified as a bicycle route.

Bicycle route signing should not end at a barrier; rather, provide information signing to direct the bicyclist around the barrier. Further guidance on signing bicycle routes is provided in the *ILMUTCD*.

17-2.01(j) Signing, Marking, and Traffic Control

Signing, pavement markings, and traffic control for bicycle facilities will be in accordance with the criteria presented in the *ILMUTCD* and applicable local ordinances. For fully access controlled highway facilities, appropriate signing may be provided to prohibit bicycle access. Consult the District Operations Engineer and the District Bicycle Coordinator to determine appropriate signing, pavement marking, and traffic control requirements. Signing and pavement markings are especially important at the approaches to intersections and at bike lane termini. Where a bike lane ends, bicyclists may be required to merge with motor vehicle traffic. Bicyclists should be encouraged with the appropriate signing and pavement markings to make lane changes in advance of the intersection.

Not all bicycle accommodations or bikeways need to be or should be marked as bike routes. Generally, only bike lanes and bicycle paths should be marked as designated bicycle facilities. The following are some examples of what should not be marked:

- wide curb lanes that provide intermittent access to businesses along the route, but provide no connection to another part of a bike route; and

- any facility that does not meet minimum design criteria in the AASHTO publication *Guide for the Development of Bicycle Facilities*.

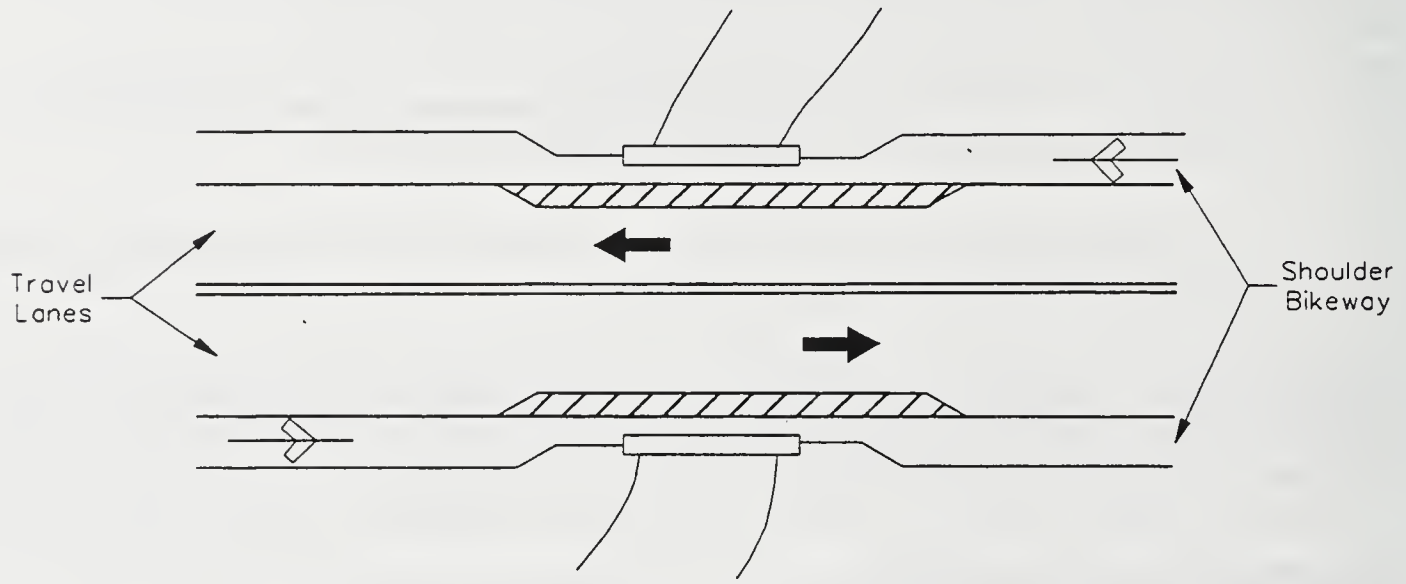
However, short segments of a continuous bike route that do not meet minimum criteria may be marked if the user is adequately warned of the conditions. For example, where a roadway serves as a bikeway and intermittent restrictions on width exist, such as at narrow bridges, mark these obstructions with both signing and pavement markings to warn bicyclists and motorists of the hazards (see Figure 17-2S).

At signalized intersections where frequent bicyclists need access to a green signal phase, a number of acceptable alternative methods are available including timed signals (where a cyclist must wait for the signal to change), traffic-actuated detectors, and push-button actuation. This opportunity (to access a green signal) should be provided where a marked bikeway crosses the project corridor. Other crossing locations to consider include potential bicycle travel from schools, parks, or other significant destinations described in Section 17-1.04(b).

Traffic-actuated detection should be sensitive to bicycles and should be located in the bicyclist's expected path, including left-turn lanes if necessary. Figure 17-2T(a) shows three recommended loop types for bicycle detection, each with particular advantages. Figure 17-2T(b) shows a pavement-marking stencil used to designate where a bicyclist should stand to activate the detector loop. The following information on bicycle detection should be considered:

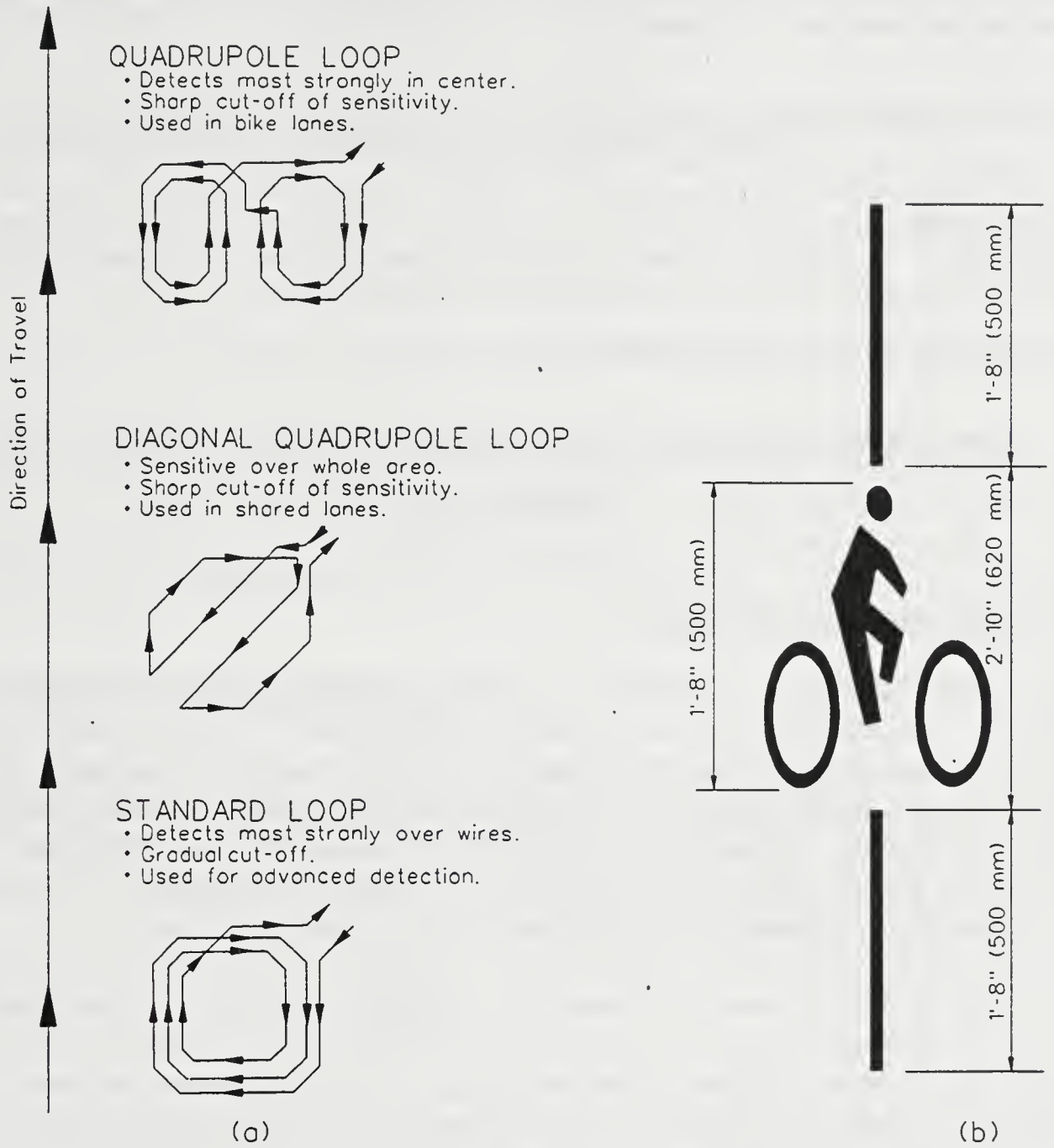
1. Quadrupole Loop Detectors. The quadrupole loop detector functions best in a bicycle path or lane situation. In such a situation, the expected position of a bicyclist can be easily predicted. This loop is less sensitive over its outer wire than over its center wires and is also relatively insensitive to motor vehicle traffic in neighboring lanes.

2. Diagonal Quadrupole Loop Detector. The diagonal quadrupole loop detector functions best in shared-roadway situations where the position of a bicycle cannot be easily predicted. This detector is equally sensitive over its entire width and is relatively insensitive to motor vehicle traffic in neighboring lanes.



BICYCLE COMPATIBLE STRIPING FOR UNAVOIDABLE OBSTACLES

Figure 17-2S



RECOMMENDED LOOP TYPES AND PAVEMENT MARKINGS FOR BICYCLE DETECTION LOOPS

Figure 17-2T

Signal timing usually does not need to be lengthened to allow adequate time for bicycle crossing. The AASHTO publication *Guide for the Development of Bicycle Facilities* recommends calculating clearance intervals with a bicyclist's speed of 10 mph (16 km/h) and a perception/reaction/braking time of 2.5 seconds. Figure 17-2U illustrates the approximate times for bicycles to cross intersections. At extremely wide intersections, however, consider providing a median refuge area that is at least 6 ft (2 m) wide if signal timing would prohibit adequate crossing time.

Number of Lanes*	2	3	4	5	6	7	8	9
Approximate Time to Cross Intersection	4.2 sec	5.0 sec	5.8 sec	6.6 sec	7.4 sec	8.2 sec	9.0 sec	9.9 sec

Assumes average of 12 ft (3.6 m) lane widths

APPROXIMATE BICYCLE TRAVEL TIMES THROUGH INTERSECTIONS

Figure 17-2U

17-2.02 Separated Bicycle Facilities

Bicycle (or shared-use) paths are facilities on exclusive rights-of-way with minimal cross flow by motor vehicles. Bicycle paths can serve a variety of purposes. They can provide a commuting bicyclist with a shortcut through a residential neighborhood, such as a connection between two cul-de-sac streets. Bicycle paths can be located along abandoned railroad rights-of-way, on former canal towpaths, river banks, and other similar areas. Bicycle paths also can provide access to areas that are otherwise only served by limited-access highways that are closed to bicycles. Appropriate locations can be identified during the planning process.

Bicycle paths should be considered extensions of the highway system. They are intended for the preferential use of bicycles in much the same way as freeways are intended for the exclusive or preferential use of motor vehicles. There are many similarities between the design criteria for bicycle paths and those for highways (e.g., horizontal alignment determination, sight distance requirements, drainage, signing and markings). However, some criteria (e.g., horizontal and vertical clearance requirements, grades, pavement structure) are dictated by the operating characteristics of bicycles that are substantially different from those of motor vehicles (see Figures 17-3A and 17-3B). During design, always be cognizant of the operating characteristics of bicycles and how they influence the design of bicycle paths. The following sections provide guidance for designing safe and functional bicycle paths.

17-2.02(a) Bicycle Path Warrants

Separated bicycle paths shall be approved by BDE, be accompanied by a transfer of maintenance and jurisdictional responsibility to local entities (see Chapter 5 for information on Local Agency Agreements and Jurisdictional Transfers), and meet one or more of the following conditions:

- A bikeway located within the adjacent roadway is considered hazardous because of factors such as motor vehicle traffic volumes and/or speeds.

- There are no alternatives for bikeways on parallel routes within 1 mile (2 km) of the project corridor.

- There is a commitment to provide bike-path continuity for an extensive length of the roadway.

The AASHTO publication *Guide for the Development of Bicycle Facilities* includes detailed information on the design and location of bicycle paths. Further guidance on bicycle paths is also available in the Rails to Trails Conservancy publication *Trails for the Twenty-First Century —Planning, Design and Management Manual for Multi-Use Trails*.

17-2.02(b) Bike Paths Versus Sidewalks

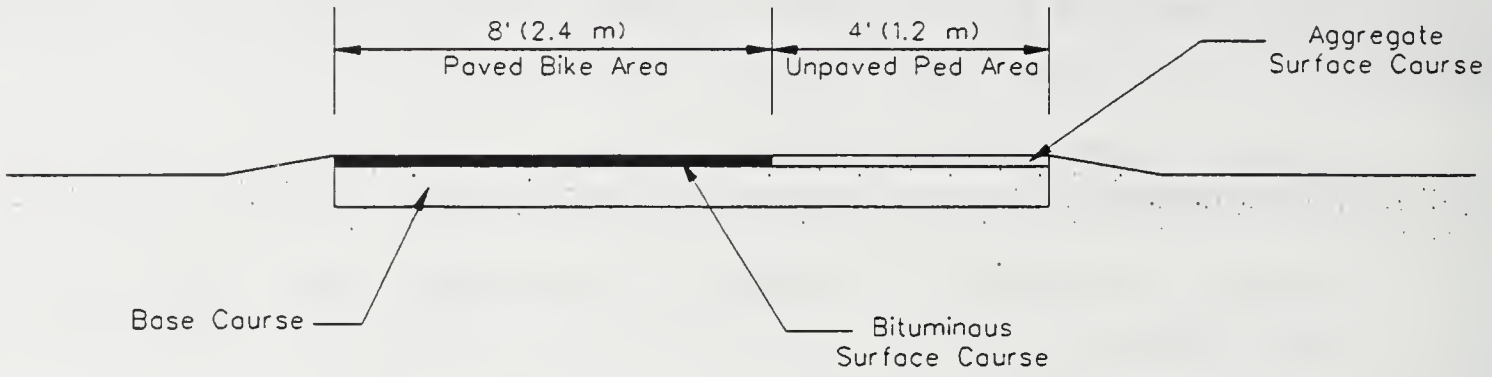
Both AASHTO and FHWA state that sidewalks generally are not designed nor recommended for bicycle travel, primarily because of their narrow width and multiple opportunities for conflicts with driveways and commercial entrances. Some suburban sidewalks, however, may be preferable to on-road accommodations, particularly if they provide adequate width, are located on both sides of the roadway (to encourage one-way travel), and are designed to minimize conflicts. In contrast, bicycling on storefront sidewalks in urban areas or in residential areas with multiple driveways should be strongly discouraged.

When assessing the appropriateness of using a sidewalk for bicycle travel, conduct a thorough survey of the area (e.g., conditions, potential conflicts), review the AASHTO publication *Guide for the Development of Bicycle Facilities,* and research any local ordinances prohibiting bicycles on sidewalks. Any decision to utilize sidewalks for bicycle accommodations shall be approved by BDE.

17-2.02(c) Shared-Use Paths

While exclusive bicycle use of a bicycle path is often ideal, it seldom occurs. For this reason, pedestrian, in-line skaters and other anticipated uses always should be considered in the design of the facility. Where practical, separate areas to minimize the conflicts arising from the different speeds of these modes. If this is not feasible, provide additional width, signing and pavement

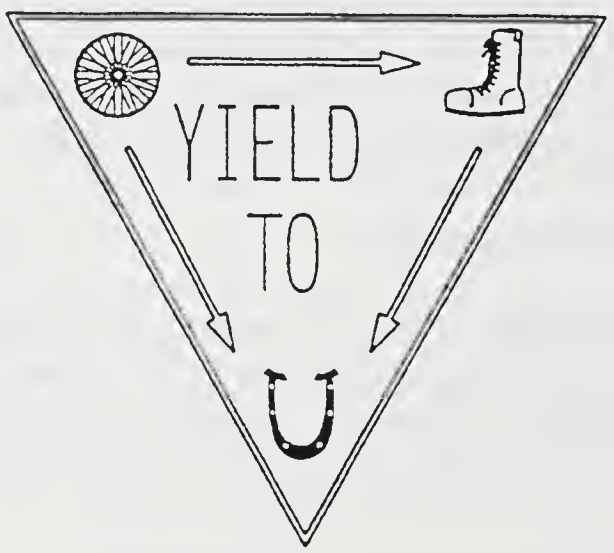
markings, and partial paving, such as that shown in Figure 17-2V, to minimize conflicts and delineate rights-of-way.



ALTERNATE BIKE PATH CROSS SECTION WITH PARTIAL PAVING

Figure 17-2V

Using a path for both bicycles and horses is not a recommended practice. However, when circumstances dictate that horses share the same corridor as bicyclists, provide a minimum shoulder width of 3 ft (1 m) and provide signs to warn users of shared use (see Figure 17-2W) and to restrict equestrians to the shoulder. Further guidance on equestrian trails is provided in the publication *Trails for the Twenty-First Century*.



SHARED-USED PATH ETIQUETTE SIGN
Figure 17-2W

17-2.02(d) Width and Clearance

Widths for shared-use bicycle paths will vary in accordance with the conditions illustrated in Figure 17-2X. Figure 17-2Y illustrates the minimum cross sections for two-way, shared-use paths.

ANTICIPATED VOLUME	ONE-WAY[1]	TWO-WAY
< 100 Users per Peak Hour	5 ft (1.5 m)	8 ft (2.4 m)[2]
100 - 300 Users per Peak	6 ft (1.8 m)	10 ft (3.0 m)
> 300 Users per Peak Hour	7 ft (2.1 m)	12 ft (3.6 m) [3]

Notes:

1. *It should be recognized that one-way bicycle paths will often be used as two-way facilities unless effective measures are taken to assure one-way operation. Without such enforcement, it should be assumed that bicycle paths will be used as two-way facilities and designed accordingly.*

2. *Use the 8 ft (2.4 m) width only at locations where there will be low usage, few conflicts among users, good horizontal and vertical alignment providing for safe and frequent passing opportunities, minimal maintenance vehicle traffic which would cause pavement edge damage, and/or right-of-way constraints or physical barriers (requires BDE approval).*

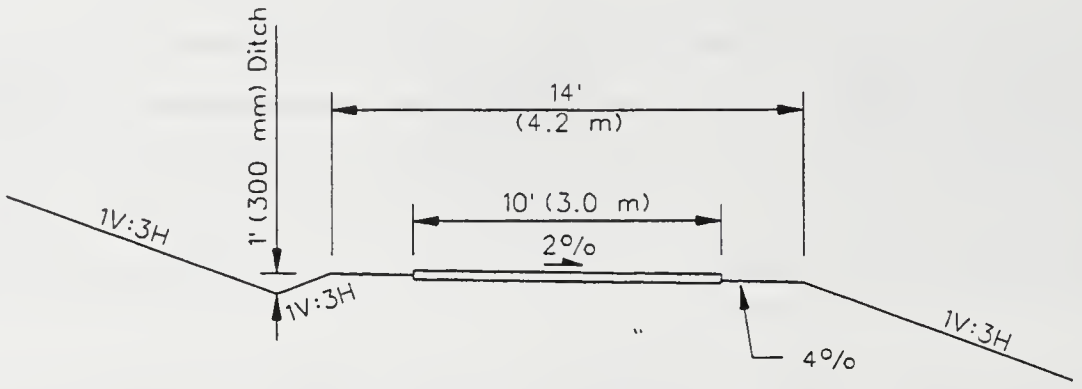
3. *Where usage exceeds 300 users per hour during the peak periods of usage, separating bicycle and pedestrian travel may be considered. Stripe 4 ft (1.2 m) bike lanes in each direction and a 4 ft (1.2 m) width for pedestrians, as shown in Figure 17-2Y. Constructing a separated pathway for pedestrians also may be considered.*

SHARED-USE BICYCLE PATH WIDTHS

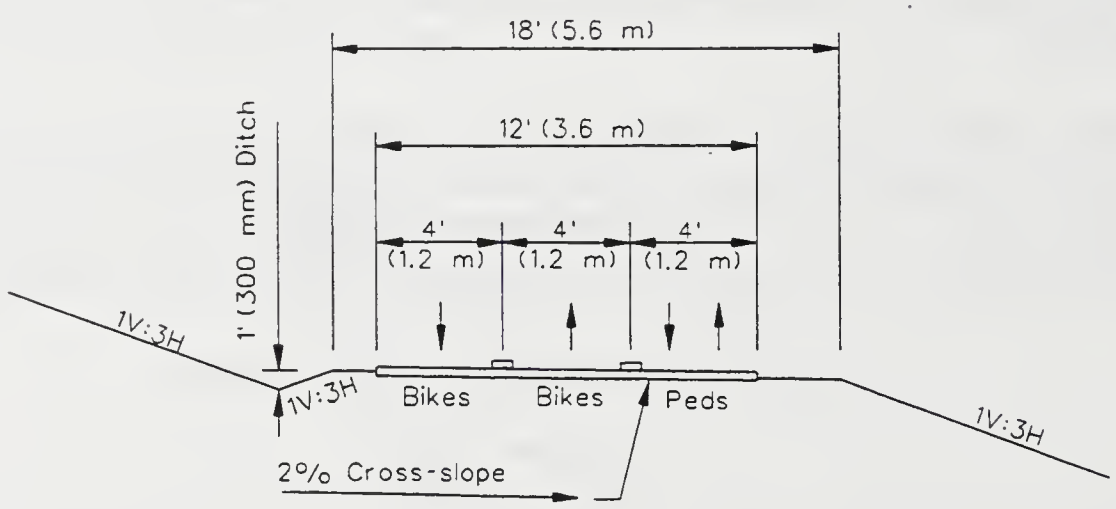
Figure 17-2X

A minimum 2 ft (600 mm) wide graded turf or gravel area should be maintained adjacent to both sides of the pavement; however, 3 ft (900 mm) or more is desirable to provide clearance from trees, poles, walls, fences, guardrails, and other lateral obstructions. A wider graded area on either side of the bicycle path also can serve occasional equestrian use or as a separate jogging path. See Section 17-2.02(c).

Where a two-way bike path is physically located within the highway right-of-way, it shall be separated horizontally from motorized traffic so as not to interfere with the operational aspects of the roadway. This separation should be as wide as practical, but not less than 5 ft (1.5 m), and still allow the bicyclist to be visible by the motorist. For example, in an urban section, a two-way



TYPICAL BIKE PATH FOR MINIMAL SHARED USE



TYPICAL BIKE PATH FOR SUBSTANTIAL SHARED USE
(Optional Striping Shown)

CROSS SECTIONS FOR TWO-WAY, SHARED-USE BICYCLE PATHS
Figure 17-2Y

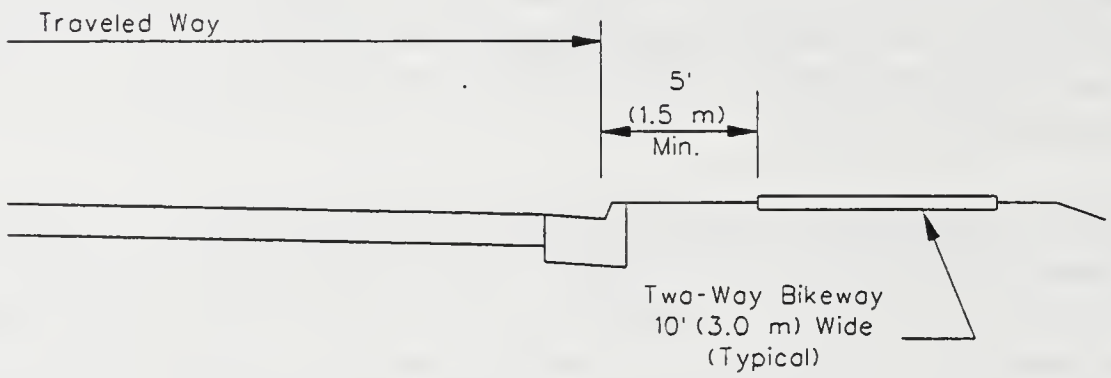
bike path would be placed much like a typical sidewalk, provided the edge of the path is more than 5 ft (1.5 m) from the curb face (see Figure 17-2Z). In a rural section, it is desirable for a two-way bike path to be located on the top of the back slope. At a minimum, the path should be no less than 10 ft (3 m) from the edge of the traffic lane in a rural section. In all cases, where a bike path is expected to cross a street near an intersection, the bike path should cross the side street either in a typical crosswalk fashion as in Figure 17-2AI or mid-block (see the AASHTO *Guide for the Development of Bicycle Facilities*).

Protect two-way bikeways located less than 5 ft (1.5 m) from the traveled way (generally, the face of the curb) with a 3.5 ft (1.1 m) high barrier. Such barriers serve both to prevent bicyclists from making undesirable movements between the path and the highway shoulder and to reinforce the concept that the bicycle path is an independent facility. For additional information on barriers and railings, see Section 17-2.01(e).

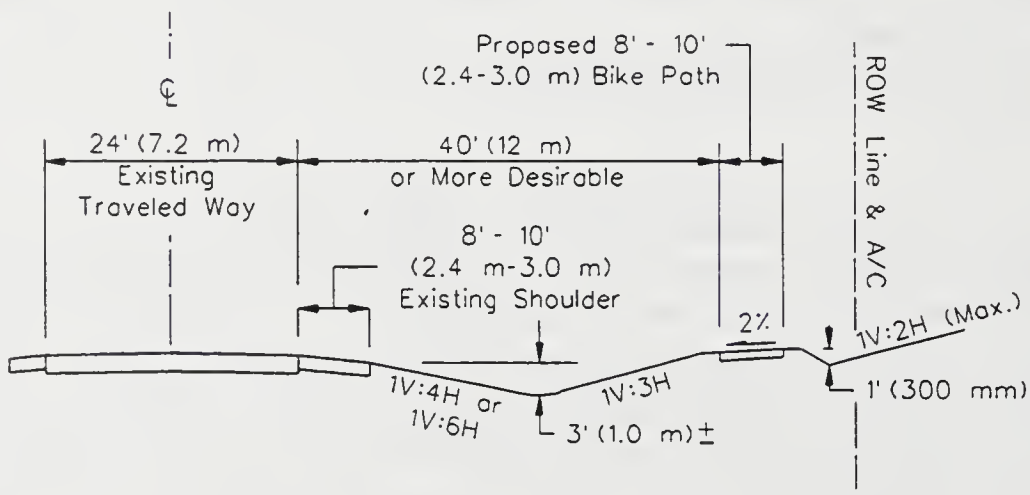
The consideration of safety rails along side slopes should be based on a subjective analysis of trail-side elements and conditions. Generally, if the consequences of striking a fixed object hazard or running off the path are believed to be more serious than hitting the railing, then the barrier may be warranted. In addition, the cost effectiveness and probability of encroachment also should be considered. For example, along a lengthy tangent section of bicycle path on an elevated railroad section, the cost effectiveness of installing safety rail along the entire distance would be questionable; however, the placement of rail at clearly hazardous locations (e.g., river crossing approaches, less than minimum widths and curves, potential points of conflict) would be prudent. Select the treatment that is judged to be the most practical and cost-effective for the site. The range of treatments includes:

- eliminating the hazard (e.g., flatten embankment, remove rock outcroppings);
- relocating the hazard;
- shielding the hazard with safety railing; or
- doing nothing.

The determination of the separation distance between a bike path and an active railroad is dependent on the speed and frequency of the rail service, the amount of access available to the railroad from the surrounding area, and the requirements of the railroad company. For low speed and low frequency service, the separation may be as little as 10 ft – 15 ft (3 m – 5 m), with no physical barrier (e.g., fencing, landscaping). As railroad speeds and frequencies increase, the requirements for increased separation and a physical barrier increase as well. A 8 ft (2.4 m) high chain link fence or other barrier type may be required to satisfy the railroad company that bicyclists will be adequately separately from the hazards of the trains.



(a)



(b)

CROSS SECTION OF PATH SEPARATED FROM ADJACENT ROADWAY

Figure 17-2Z

The vertical clearance to obstructions should be a minimum of 8 ft (2.4 m). However, vertical clearance may need to be greater to permit passage of maintenance vehicles, rescue vehicles, and ambulances. Rescue vehicles typically can exceed 9 ft (2.7 m) in height and 9 ft (2.7 m) in width. In undercrossings and tunnels, a vertical clearance of 10 ft (3 m) is desirable. The geographical location of the vertical obstruction, as well as alternate access points, are primary considerations for determining clearance. It is imperative that adequate clearance be provided where the bikeway offers the primary access to a remote location. Any overhead restrictions with less than a 10 ft (3 m) clearance should be marked on the structure according to the *ILMUTCD.*

17-2.02(e) Design Speed

Bicycle paths should be designed for a selected speed that is at least as high as the preferred speed of the faster bicyclists. In general, use a minimum design speed of 20 mph (30 km/h). However, where the grade exceeds 4% or where strong prevailing tail winds exist, (e.g., along a lake or river), a design speed of 30 mph (50 km/h) is advisable.

On unpaved paths, where bicyclists tend to ride slower, use a lower design speed of 15 mph (25 km/h). Similarly, where the grades or the prevailing winds dictate, a higher design speed of 25 mph (40 km/h) should be considered.

17-2.02(f) Horizontal Alignment and Superelevation

Unlike an automobile, a bicycle must be leaned while cornering to prevent it from falling outward due to centrifugal force. The balance of centrifugal force due to cornering, and the bicycle's downward force due to its mass, act through the bicycle/operator's combined center of mass which must intersect a line that connects the front and rear tire contact points.

The horizontal curvature should not require a bicyclist to use a lean angle greater than 15°. At these curves, the minimum radius is calculated by the following equation:

$$R_{min} = 0.067\ V^2/\tan\theta \qquad \text{(U S Customary) (Equation 17-2.1)}$$

$$R_{min} = 0.0079\ V^2/\tan\theta \qquad \text{(Metric) (Equation 17-2.1)}$$

Where:
- R_{min} = minimum radius of curvature, ft (m)
- V = design speed, mph (km/h)
- θ = lean angle from vertical, degrees

Figure 17-2AA presents minimum radii for horizontal curves where lean angles up to 15° are appropriate and the bike path is paved.

DESIGN SPEED (V)		LEAN ANGLE (θ) (degrees)	MINIMUM RADIUS (R_{min})	
mph	km/h		ft	m
15	20	15	55	12
20	30	15	100	27
25	40	15	155	47
30	50	15	225	74

DESIRABLE MINIMUM RADIUS FOR PAVED PATHS BASED ON 15° LEAN ANGLE

Figure 17-2AA

Where a lean up to 20° can be tolerated, the minimum radius is calculated by the following equation:

$$R_{min} = \frac{V^2}{15\left(\frac{e}{100} + f\right)}$$ (US Customary) (Equation 17-2.2)

$$R_{min} = \frac{V^2}{127\left(\frac{e}{100} + f\right)}$$ (Metric) (Equation 17-2.2)

Where: R_{min} = minimum radius of curvature, ft (m)
V = design speed, mph (km/h)
e = superelevation rate, percent
f = side-friction factor

Figure 17-2AB presents minimum radii for horizontal curves where lean angles up to 20° can be tolerated and the bike path is paved. The radii assume a maximum superelevation rate of 2%. Where transitioning from a 2% cross slope on tangent to a 2% superelevation rate on the high side of the curve, use a minimum transition length of 15 ft (5 m).

DESIGN SPEED (V)		SIDE-FRICTION FACTOR (f) (Paved Surface)	MINIMUM RADIUS (R_{min})	
mph	km/h		ft	m
15	20	0.31	45	10
20	30	0.28	90	24
25	40	0.25	155	47
30	50	0.21	260	86

MINIMUM RADII FOR PAVED PATHS BASED ON 2% SUPERELEVATION RATE AND 20° LEAN ANGLE

Figure 17-2AB

Figure 17-2AC presents minimum radii for horizontal curves where lean angles up to 20° can be tolerated and the bike path is unpaved.

DESIGN SPEED (V)		SIDE-FRICTION FACTOR (f) (Unpaved Surface)	MINIMUM RADIUS (R_{min})	
mph	km/h		ft	m
15	20	0.16	85	18
20	30	0.14	165	45
25	40	0.12	300	90
30	50	0.11	460	152

MINIMUM RADII FOR UNPAVED PATHS BASED ON 2% SUPERELEVATION RATE AND 20° LEAN ANGLE

Figure 17-2AC

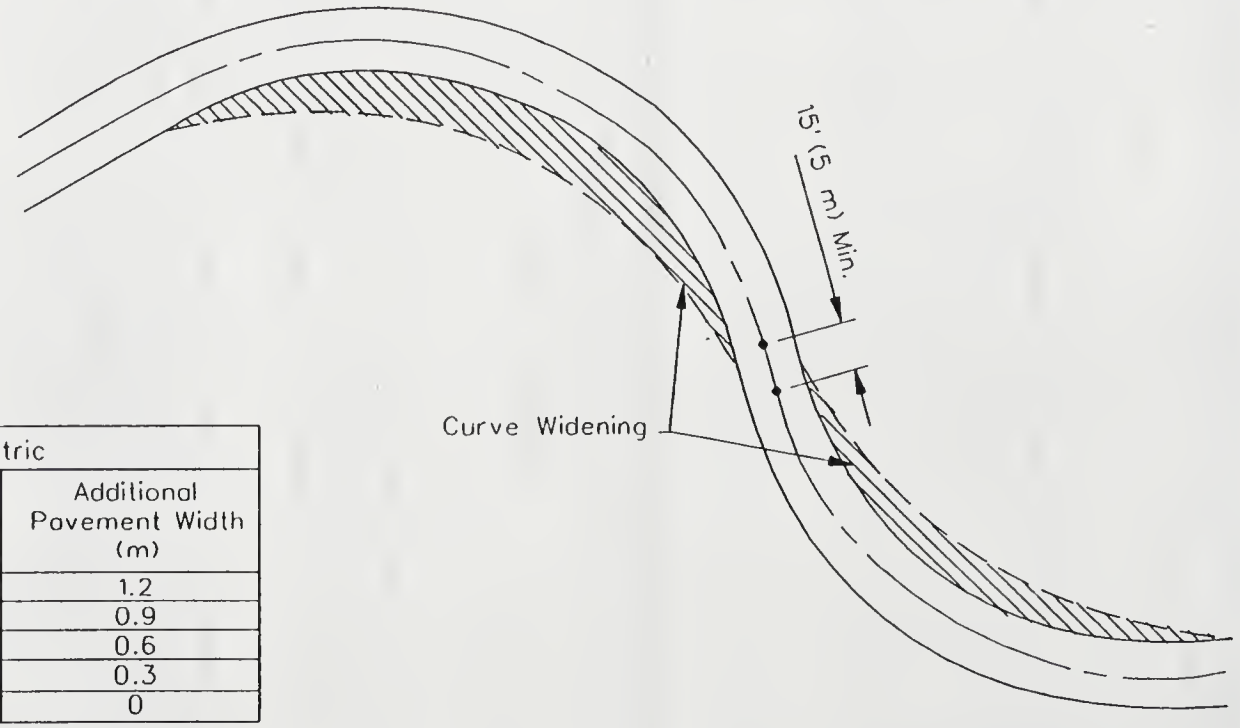
When a lean angle of 20° is used, the bicyclist taking the curve will occupy more horizontal space and more width needs to be provided. In these cases, the pathway width should be increased as in Figure 17-2AD and a centerline located in the middle of the curve.

When curve radii smaller than those shown in Figure 17-2AB must be used because of limited right-of-way, topographical features, or other considerations, standard curve warning signs and supplemental pavement markings should be installed according to the *ILMUTCD*. The negative effects of sharper curves can also be partially offset by widening the pavement through the curves as shown in Figure 17-2AD.

17-2.02(g) Drainage

Bicycle path pavements should have a cross slope of 2% for drainage. Sloping in one direction instead of crowning is preferred and usually simplifies the drainage and surface construction. A smooth surface is essential to prevent water ponding and ice formation. Shoulders should provide further positive drainage by sloping at 2% to 4%.

Where a bicycle path is constructed on the side of a hill, a ditch of suitable dimensions should be provided on the uphill side to intercept the hillside drainage. Design these ditches so as not to present an obstacle to bicyclists. Figure 17-2AE shows the dimensions of a suitable ditch. Where necessary, provide catch basins with drains to carry intercepted water under the path. Locate drainage grates and manhole covers outside the traveled way of bicyclists. To assist in draining the area adjacent to the bicycle path, consider preserving the natural ground cover. Include seeding, mulching, and sodding of adjacent slopes, swales, and other erodible areas in the design plans.

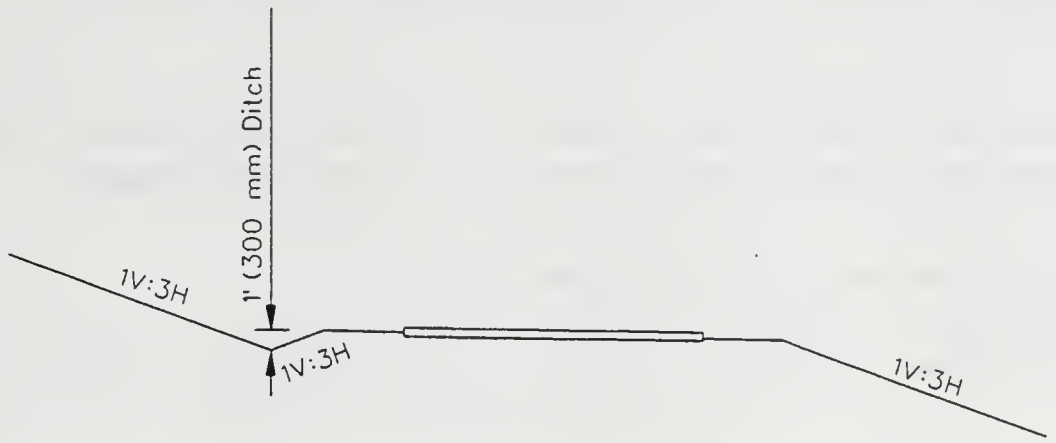


US Customary		Metric	
Curve Radius (ft)	Additional Pavement Width (ft)	Curve Radius (m)	Additional Pavement Width (m)
0-25	4	0-7.5	1.2
25-50	3	7.5-15	0.9
50-75	2	15-22.5	0.6
75-100	1	22.5-30	0.3
100+	0	30+	0

Note: Only use additional pavement width where curve radii are less than design speed of bike path or where a 20° lean angle is assumed.

BIKEWAY CURVE WIDENING FOR VARIOUS CURVE RADII

Figure 17-2AD



BIKE PATH DRAINAGE
Figure 17-2AE

17-2.02(h) Grade

Long excessive grades on bicycle paths should be kept to a minimum. Avoid using grades greater than 5% because they are difficult for many bicyclists to ascend and the descents cause some bicyclists to exceed the speeds at which they are competent. Where terrain dictates, designers may need to exceed the 5% grade for short sections in accordance with Figure 17-2AF.

Shared Use Path Grade	Length
5-6%	For up to 800 ft (240 m)
7%	For up to 400 ft (120 m)
8%	For up to 300 ft (90 m)
9%	For up to 200 ft (60 m)
10%	For up to 100 ft (30 m)
11+%	For up to 50 ft (15 m)

GRADE RESTRICTIONS FOR SHARED USE PATHS

Figure 17-2AF

Grades steeper than 3% are not practical for bicycle paths with crushed aggregate surfaces. Where terrain dictates and where the proposed bike path is to be constructed with crushed stone, provide a stabilized surface on the portions of the path with the steeper grades. This design feature also has advantages of alleviating erosion on steep slopes and enhances safety by improving skid resistance.

Options to mitigate problems caused by excessive grades are as follows:

- When using a long grade, provide an additional 4 ft to 6 ft (1.2 m to 1.8 m) of width to permit slower speed bicyclists to dismount and walk their bikes up the grade.
- Provide signing to alert bicyclists of the maximum percent of grade.
- Provide recommended descent speed signing.
- Exceed minimum stopping sight distances and provide longer radius curves.

17-2.02(i) Accessibility

The vast majority of independent bicycle paths in Illinois are located on abandoned railroads, which were originally located and constructed where changes in elevation and, thus, grades could be minimized. Many miles (kilometers) of paths have been fashioned from canal towpaths. These grades are ideal for meeting the needs of all users, including disabled users. Logically located access points to these paths also should ensure a disabled person's ability to access and use these facilities. There will exist paths, however, that will be impractical or environmentally inappropriate to provide access for the disabled. The conditions that would prevent full accessibility include those that:

- Cause harm to significant natural, cultural, historic or religious characteristics of a site;
- Alter the fundamental experience of the setting or intended purpose of the trail;
- Require construction methods that are prohibited by federal, state or local regulations; and
- Involve terrain characteristics (e.g., slope, soils, geologic or aquatic) that prevent compliance with the technical provisions (being developed by the Regulatory Negotiation Committee on Outdoor Developed Areas).

The ADA Access Board's publication *Recommendations for Accessibility Guidelines: Recreational Facilities and Outdoor Developed Areas* suggests that paths be assessed according to their "challenge level." Locate major path heads and access points and their associated facilities near areas that are available to all users, so that the facility may be enjoyed by as many users as possible. Thus, path heads and access points should be accessible to all users. However, because areas of the path may not be accessible to all users, the challenge level of each facility should be posted for the utility of all disabled users.

Outdoor linear bikeways/paths are classified based on the level of development of the surrounding area. A "Highly" developed area would be represented by a bikeway/path running through an urbanized area, such as a downtown area or a college campus. A "Moderately" developed area

might be a path located along a river or canal in a semi-urbanized area. A "Minimally" developed area would be represented by a remote hiking path largely carved out of the existing landscape.

The accessibility challenge level varies with the function of the particular segment of the facility. Access routes, for example, from the parking lot to the path itself, require a higher level of development than the path. Accessibility for each of these types of facilities becomes more difficult as they become more remote. Accordingly, a "Highly" developed area should present an easier level of accessibility. A "Moderately" developed area presents a more moderate level of accessibility, and a "Minimally" developed area presents a more difficult accessibility level. Figure 17-2AG presents design criteria for both access routes and paths.

TYPE OF FACILITY	LEVEL OF DEVELOPMENT					
	Highly		Moderately		Minimally	
	A[1]	B[1]	A	B	A	B
Sustained Running Grade (max)	5%	5%	5%	8%	8%	12%
Maximum Grade Allowed[2]	8%	10%	10%	14%	10%	20%
For a Maximum Distance	30 ft (9 m)	30 ft (9 m)	50 ft (15 m)	50 ft (15 m)	50 ft (15 m)	50 ft (15 m)
Cross Slope (max)	3%	3%	3%	5%	3%	8%

1. *Column A is the accessibility design criteria for access routes to bicycle paths. Column B is the design criteria for bicycle paths.*

2. *Maximum grade should not exceed the sustained running grade for more than 20% of length.*

SUMMARY OF ACCESSIBILITY DESIGN CRITERIA FOR BICYCLE PATHS/TRAILS
Figure 17-2AG

17-2.02(j) Sight Distance

To provide bicyclists with an opportunity to see and react to the unexpected, a bicycle path should be designed with adequate stopping sight distance and intersection sight distance. The distance required to bring a bicycle to a full controlled stop is a function of:

- the bicyclist's perception and brake reaction time,
- the initial speed of the bicycle,
- the coefficient of friction between the tires and the pavement, and
- the braking ability of the bicycle.

See the AASHTO publication *Guide for the Development of Bicycle Facilities* for information on determining adequate sight distance.

Bicyclists frequently ride abreast of each other on bicycle paths and, on narrow bicycle paths, bicyclists have a tendency to ride near the middle of the path. For these reasons, and because of the serious consequences of a head-on bicycle crash, calculate lateral clearances on horizontal curves based on the sum of the stopping sight distances for bicyclists traveling in opposite directions around the curve. Where this is not feasible, consider widening the path through the curve, installing a yellow center stripe, installing turn or curve signs (W1-1 or W1-2) as appropriate, or "REDUCE SPEED" sign, or some combination of these alternatives.

17-2.02(k) Bike Path Intersections

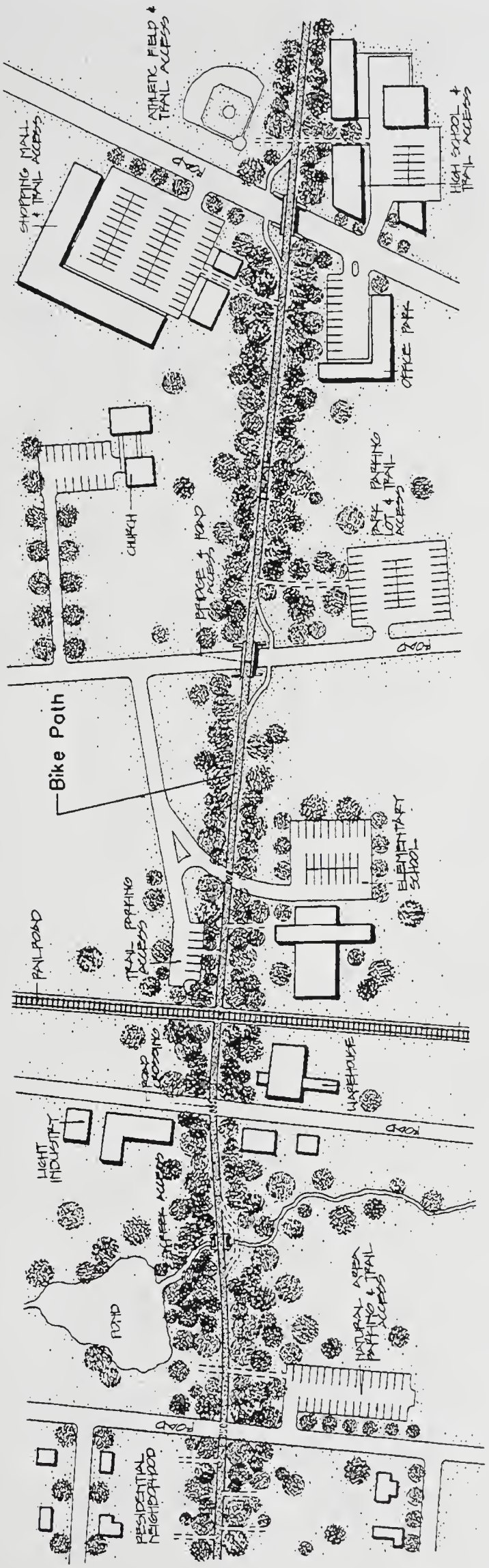
Very few bikeways start and end at a trail head without crossing various transportation elements in between. These intersections can be roadways, railroads, or other bike paths. These points of intersection present potential conflicts and must be thoroughly analyzed to consider their impacts on the trail user as well as the user of the other intersecting legs. Figure 17-2AH illustrates how a bikeway could interact with a variety of intersections.

Roadway Intersections

Intersections with roadways are important considerations in bicycle path design. It is important to understand that the majority of bicycle travel on pathways is not from endpoint to endpoint and that cyclists will use the roadway system as access and egress to the path. It is therefore imperative to ensure safe and reasonable points of access to and from roadways along the length of the bike path.

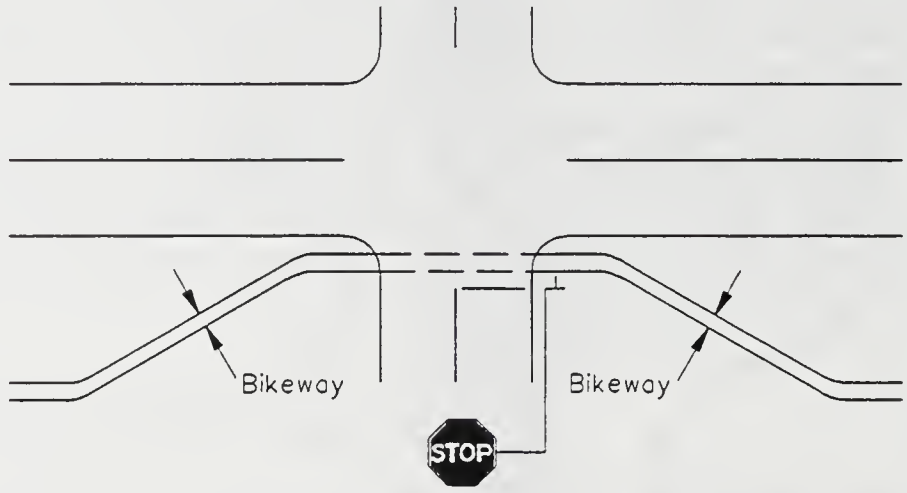
According to AASHTO, it is preferable that the crossing of a bicycle path and a highway be at a location significantly away from the influence of intersections with other highways. Controlling vehicular movements at such remote intersections is more easily and safely accomplished through the application of standard traffic control devices and normal rules of the road.

Where physical constraints prohibit such independent intersections, the crossing may be at or adjacent to a pedestrian crossing, as shown in Figure 17-2AI. These joint crossings should meet the requirements of Figure 17-2X where possible to accommodate dual use. However, any use of rerouting that causes redundant travel may be perceived as a barrier and should not be used. Use engineering judgment to decide when such safety measures are necessary and cost effective by considering traffic volumes, motor vehicle speeds, and anticipated usage. Assign right-of-way and provide adequate sight distance to minimize the potential for conflicts resulting from unconventional turning movements.



BIKE PATH /TRAIL INTERACTION WITH VARIOUS INTERSECTIONS

Figure 17-2AH



SHARED BICYCLE/PEDESTRIAN CROSSING

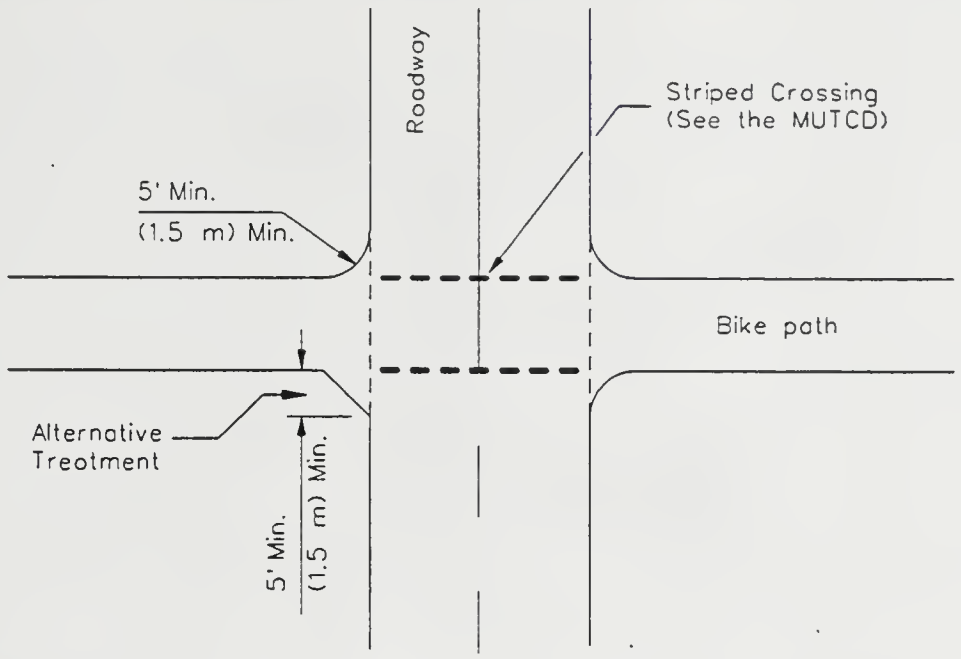
Figure 17-2AI

Where bike paths cross roadways, assess the safety potential of the crossings. Evaluate the crossing according to the minimum pedestrian volume and school crossing control criteria provided in the *ILMUTCD* and the ITE publication *School Trip Safety Program Guidelines*. This guidance indicates that adequate gaps need to occur on an average of at least one per minute during times of predominate usage. If adequate gaps are not available, some form of crossing control is warranted. Control can include flashing lights, signals, or a grade separation. At crossings with high-volume, multi-lane arterial highways where a signal or a grade separation is not warranted, consider providing a median refuge area for bicyclists.

Where bicycle paths terminate at existing roads, it is important to integrate the path into the existing system of roadways. Properly design the terminals to transition the traffic into a safe merging or diverging situation. Provide appropriate signing to warn and direct both bicyclists and motorists regarding these transition areas. Ensure that bicycle path signs are located so that they do not confuse motorists and that roadway signs are placed so as not to confuse bicyclists.

Bicycle path intersection approaches should have relatively flat grades. Check stopping sight distances at intersections and provide adequate warning to allow bicyclists to safely stop before the intersection, especially on downgrades.

Flare the ramps for curb cuts at intersections to allow bicycle movements from the roadway to the path. A minimum flare of 5 ft (1.5 m), as shown in Figure 17-2AJ, will allow bicycles, especially tandem bicycles (i.e., two-person bicycles) and bicycles with trailers, a better opportunity to negotiate the turn without running off the pathway. If maintenance vehicles are expected to access the trail at these points, provide a 15 ft (4.5 m) flare to reduce edge rutting and turf disturbance.



CURB FLARES AT BICYCLE/ROAD INTERSECTIONS

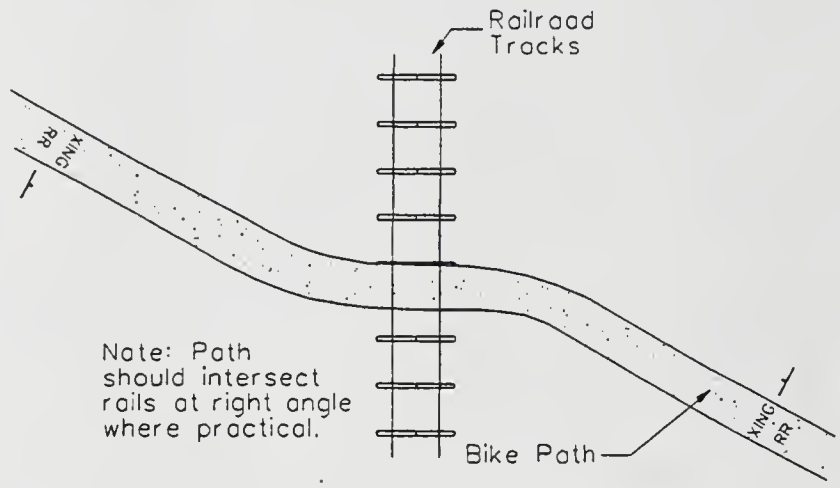
Figure 17-2AJ

Railroad Crossings

Where independent bike paths intersect with railroads, locate the crossing as close to a right angle as practical for safety reasons, as shown in Figure 17-2AK. See Item 2 in Section 17-2.01(g) for specific design guidance. Signing and pavement markings shall be in accordance with the *ILMUTCD*. Crossbuck signs and pavement markings are minimum advanced warning requirements. In addition, ensure that adequate sight distance is provided so bicyclists can see approaching trains. Existing and planned railroad operations always should be factored into the design elements of the crossing. As train speeds and frequencies increase, the level of crossing protection should increase. It may be necessary to provide train activated crossing gates and signals, along with fencing, to ensure the safety of bicyclists and to satisfy the requirements of the railroad company. In extreme situations, rerouting the bike path to an adjacent roadway crossing or installing an underpass or overpass may provide the only crossing solution.

Bike Path Crossings

Where paths intersect with other paths, the minimum radius provided should be 15 ft (4.5 m), as shown in Figure 17-2AL, to accommodate tandem bicycles, bicycles with trailers, and occasional vehicular movements without running off the pathway. These movements are likely to be negotiated at higher speeds and thus larger radii are necessary.



BIKE PATH/RAILROAD INTERSECTIONS

Figure 17-2AK

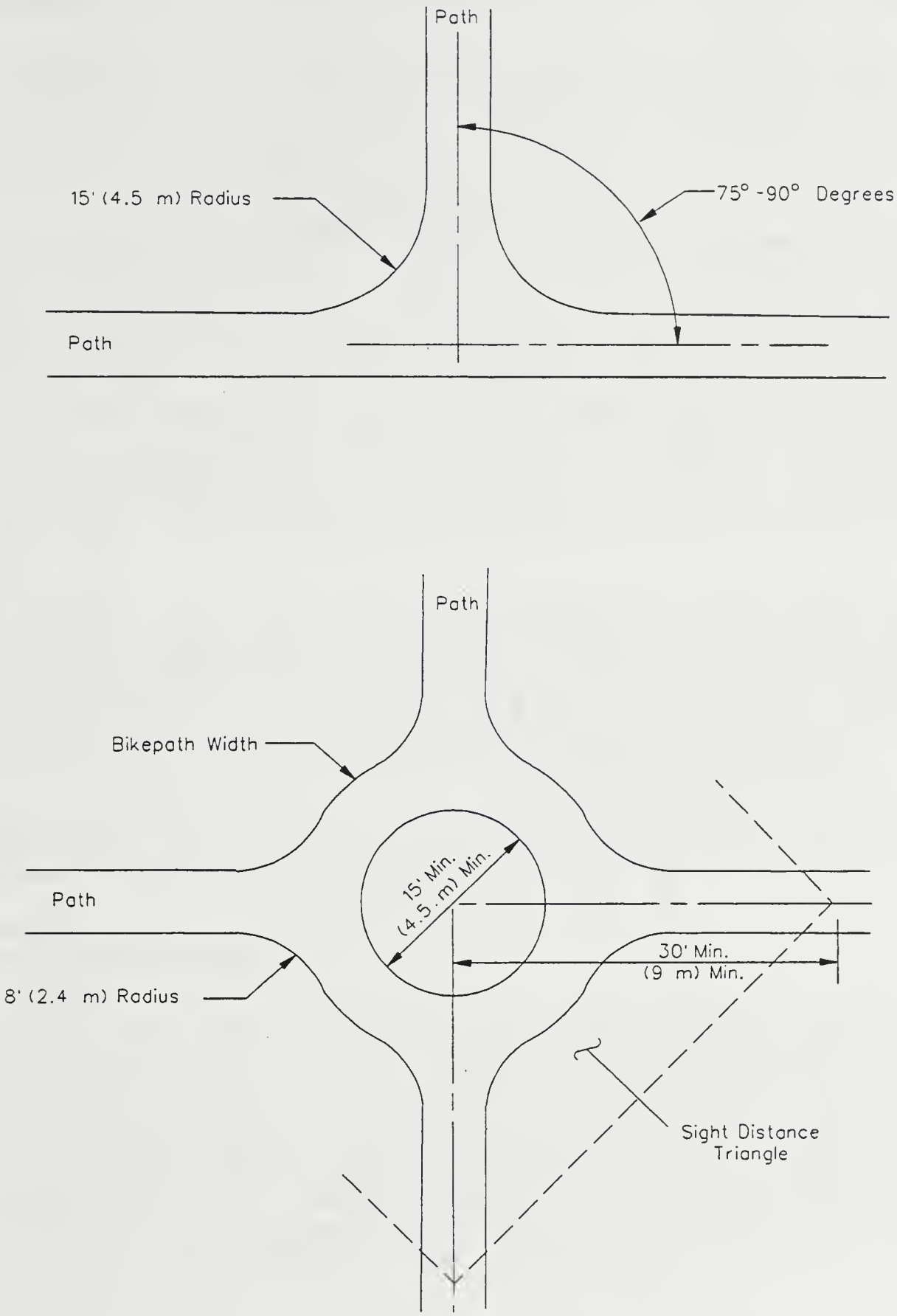
17-2.02(I) Structures

An overpass, underpass, small bridge, or drainage facility may be necessary to provide continuity to a bicycle path. For continuity purposes, it also may be necessary to continue a bike path across a highway structure. Section 17-2.01(e) provides design criteria for bikeway facilities on highway structures (e.g., widths, barriers, railings).

With new bicycle path structures, the minimum clear width should be the same as the path's paved approach, and the desirable clear width should be 2 ft (600 mm) minimum on each side. See Figure 17-2AM. Carrying the clear width across a bicycle path structure has two advantages. First, it provides a minimum horizontal shy distance from the railing or barrier; and second, it provides needed maneuvering space to avoid conflicts with pedestrians and other bicyclists who are stopped on the bridge. For example, additional width may be warranted on structures over rivers where users would likely stop to enjoy the view. Users would be less likely to stop on bridges over railroads or highways or in tunnels. See Section 17-2.02(d) for additional guidance on bikeway widths and horizontal and vertical clearances.

Bridges designed exclusively for bicycle traffic should be designed for pedestrian live loadings in accordance with the AASHTO publication *Guide Specifications for Design of Pedestrian Bridges*. In general, multipurpose bridges should be designed to support their anticipated traffic. Bridges that must provide access for ambulances or rescue vehicles shall support a minimum design load of 6.25 tons (55.6 kN).

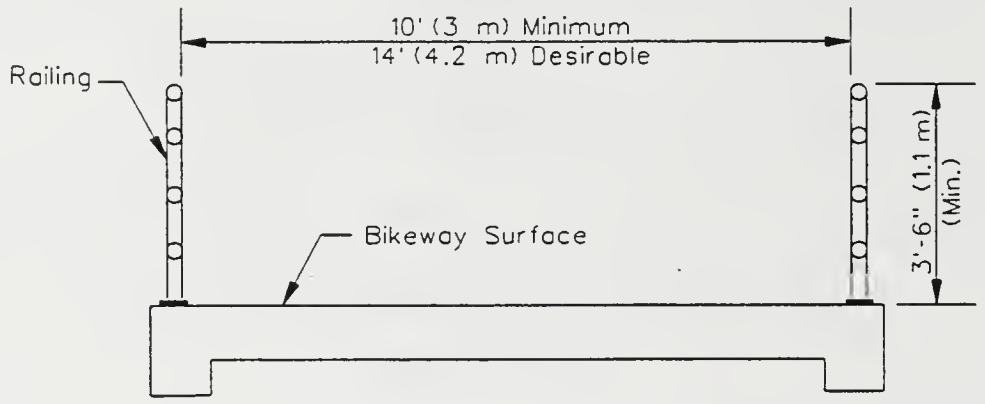
On all bridge decks, ensure that bicycle-safe expansion joints are used. Where wood planking is used for flooring, it should be placed 45 to 90 degrees from the direction of travel as shown in Figure 17-2AM.



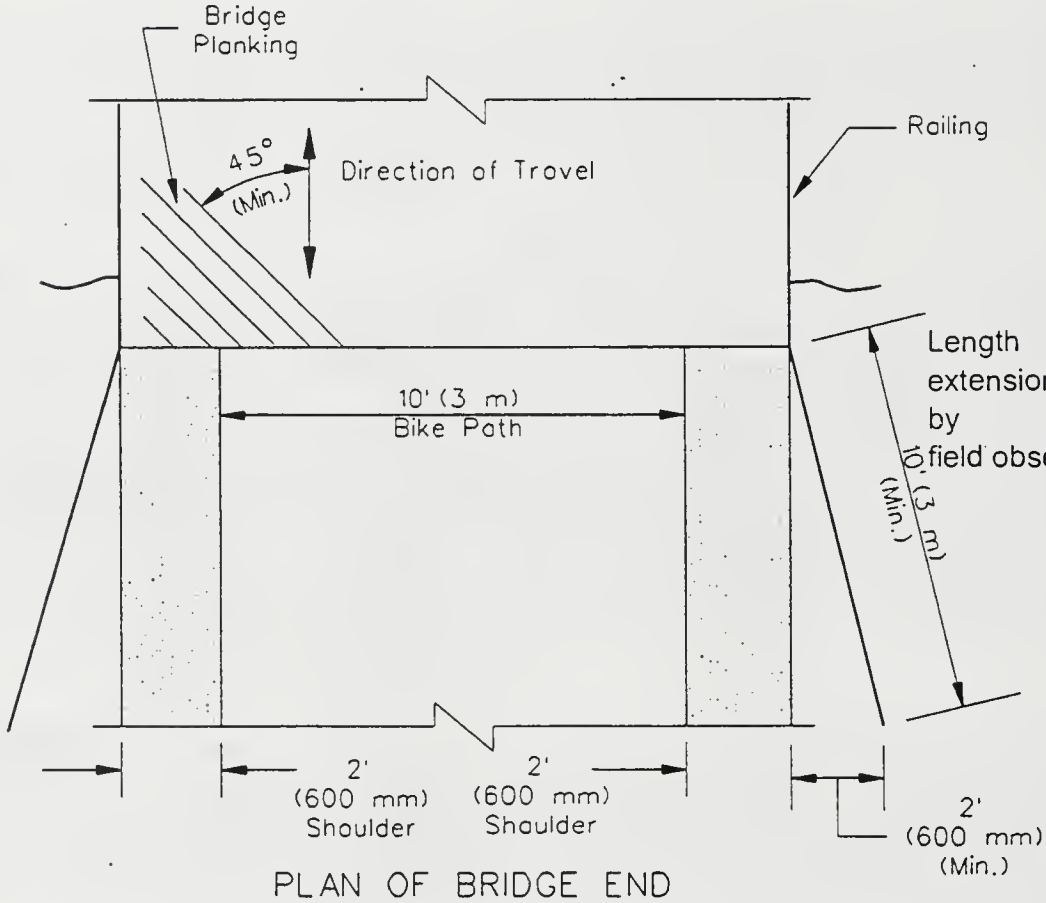
Note: Consider "KEEP RIGHT" signs.

BIKE PATH INTERSECTIONS

Figure 17-2AL



BRIDGE CROSS SECTION



Length and angle railing extension to be determined by Engineer based on field observations.

PLAN OF BRIDGE END

PLAN AND CROSS SECTION OF BIKE PATH BRIDGE WITH RAILING EXTENSION

Figure 17-2AM

Bridge railings on paths should be a minimum of 3.5 ft (1.1 m) tall. Bridge approaches should provide a safety railing as shown in Figure 17-2AM to protect users from hazardous conditions.

Certainly, other types of bikeway structures will be necessitated by the various ways that bikeways can interface with roadways, rivers, or railroads. Bikeways can utilize the underside of a highway or railroad bridge. Bikeways can cross under roadways or railroads in various ways, as illustrated in Figures 17-2N, 17-2AN, and 17-2AO.

Design of bikeway tunnels should follow the same guidance for size and overhead clearance, as discussed in Section 17-2.02(d), with recognition of the types of traffic that need to be accommodated (e.g., emergency vehicles). With tunnels or box culverts exceeding 100 ft (30 m) in length, the users' sense of security is enhanced with larger openings (minimum 10 ft (3 m) high and 14 ft (4.2 m) wide). The alignment of the approaching path should provide a clear view through the structure where practical. On long structures, such as under multi-lane highways, a shaft opening at the median can provide natural light and ventilation. Lighting should be considered in areas where security is a concern (see Section 17-2.02(n)). Where bikeways are routed under highway bridges, drainage from the bridge above should be routed to drain away from the path surface.

In limited, restricted cases, bicycle access sometimes can be provided under roadways or railroads through pedestrian underpasses. While not ideal because a bicyclist may need to dismount and act as a pedestrian, these underpasses sometimes offer a safer alternative than an at-grade crossing. Where bicyclists are required to walk their bicycles up stairs, provide ramps at the outer edge to facilitate ease of access and egress as shown in Figure 17-2AP.

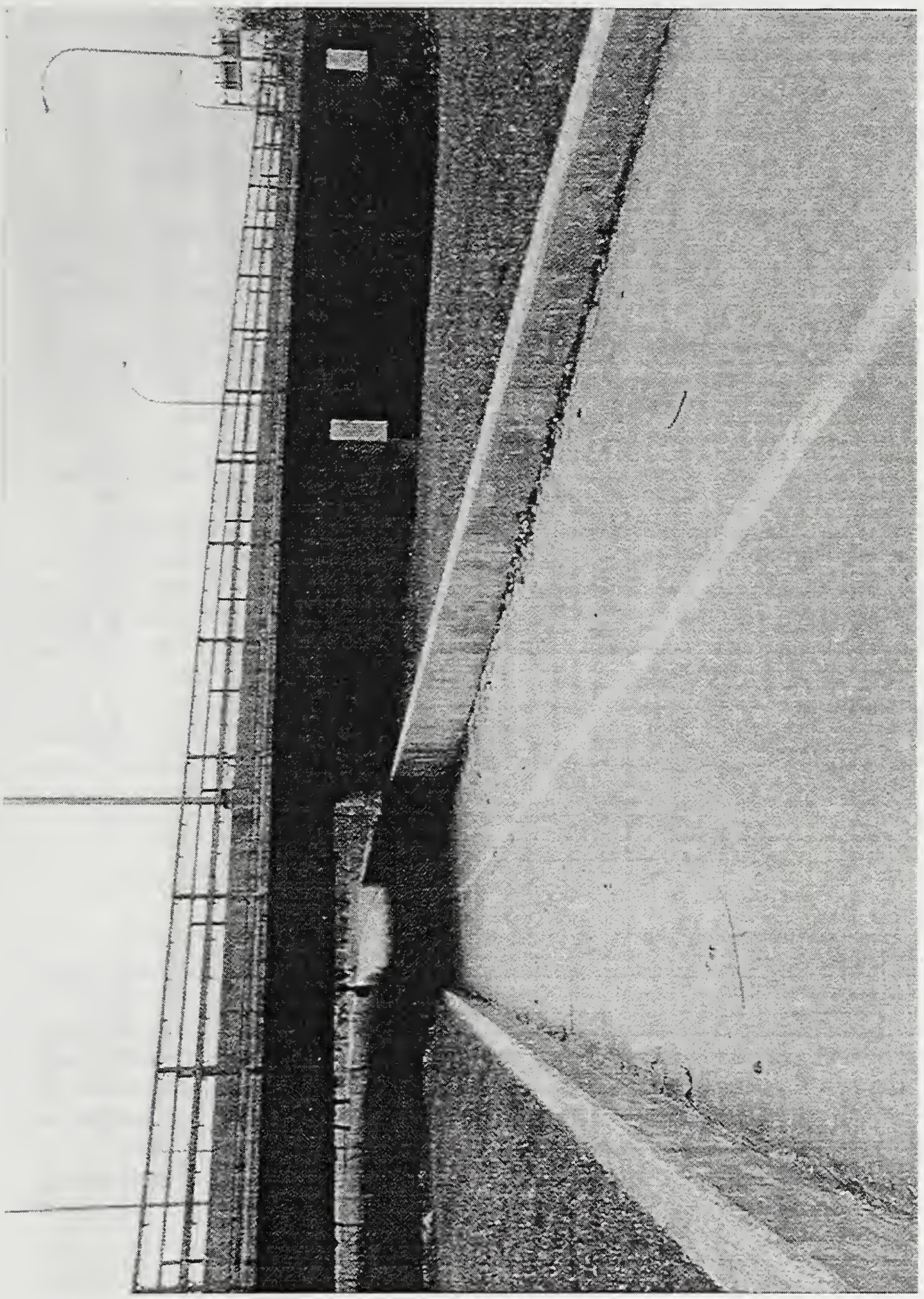
In areas where water flow is intermittent and minimal, paved fords may be a reasonable option to a bridge.

17-2.02(m) Signing and Marking

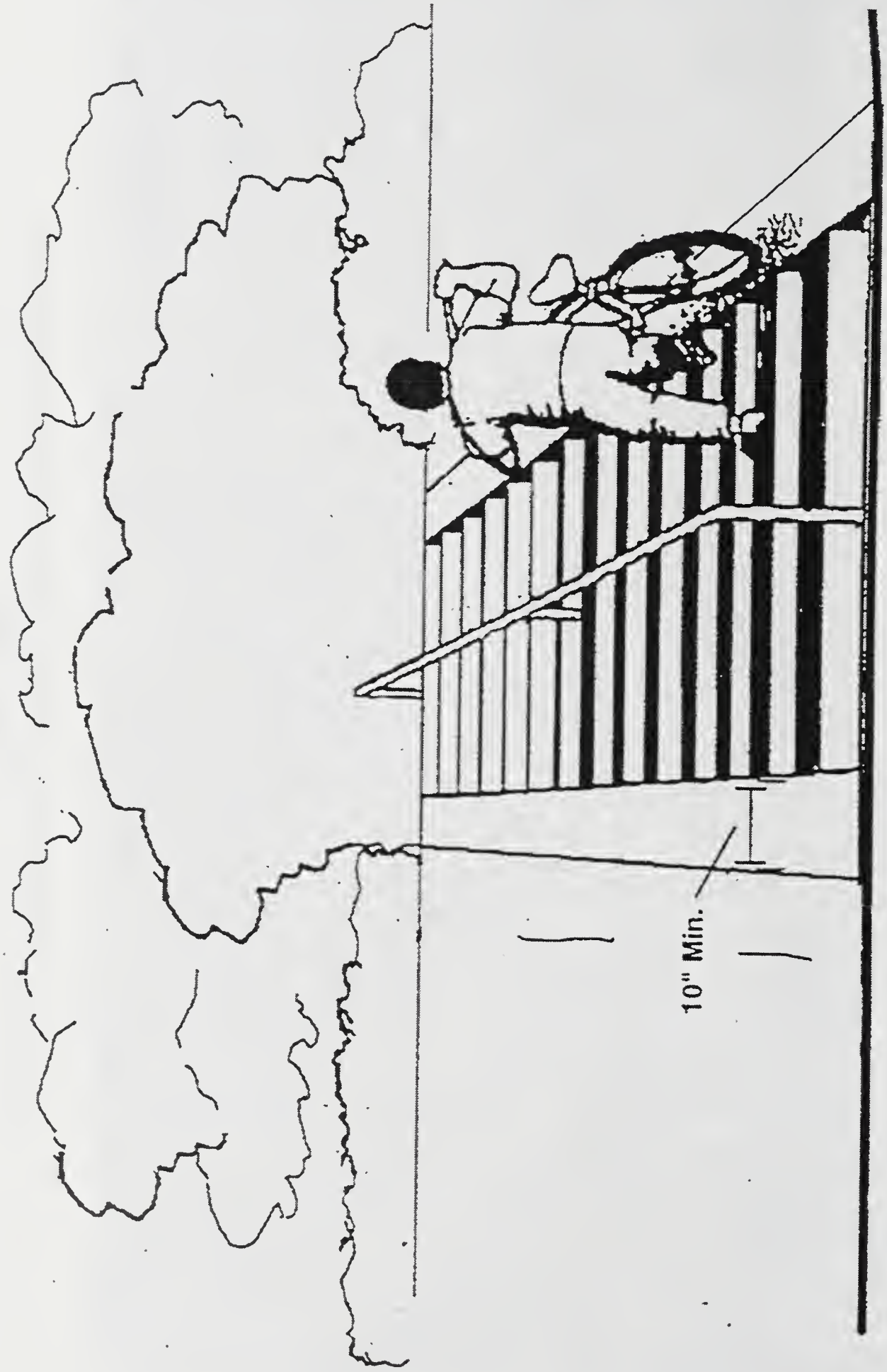
Adequate signing and marking are essential on bicycle paths, especially to alert bicyclists to potential conflicts and to convey regulatory messages to both bicyclists and motorists at highway intersections. Provide warning signs for design elements that are less than minimum criteria (e.g., less than minimum curve radii, vertical or horizontal clearances, speeds dictated by grades) to warn the user of these conditions. In addition, use guide signing, (e.g., directions, destinations, distances, route numbers, names of crossing streets) in the same manner as they are used on highways. In general, uniform application of traffic control devices, as described in the *ILMUTCD*, will tend to encourage proper bicyclist, as well as motorist, behavior.



BOX CULVERTR INTENDED FOR FUTURE BIKEWAY
Figure 17-2AN



BIKE PATH DEPRESSED TO GAIN ADEQUATE VERTICAL CLEARANCE
Figure 17-2AO



BIKE RAMP AT STAIR ACCESS
Figure 17-2AP

Consider a broken yellow centerline stripe (3 ft (1 m) stripe with 10 ft (3 m) gap) to separate opposite directions of travel. This is particularly beneficial in the following circumstances:

- for heavy volumes of bicycles,
- on curves with restricted sight distance, and
- on unlighted paths where nighttime riding is expected.

White edge lines also can be very beneficial where nighttime bicycle traffic is expected. Marking should be considered for shared-use paths that are 13 ft (4 m) or wider to delineate lanes for bicyclists and pedestrians, as shown in Figure 17-2Y.

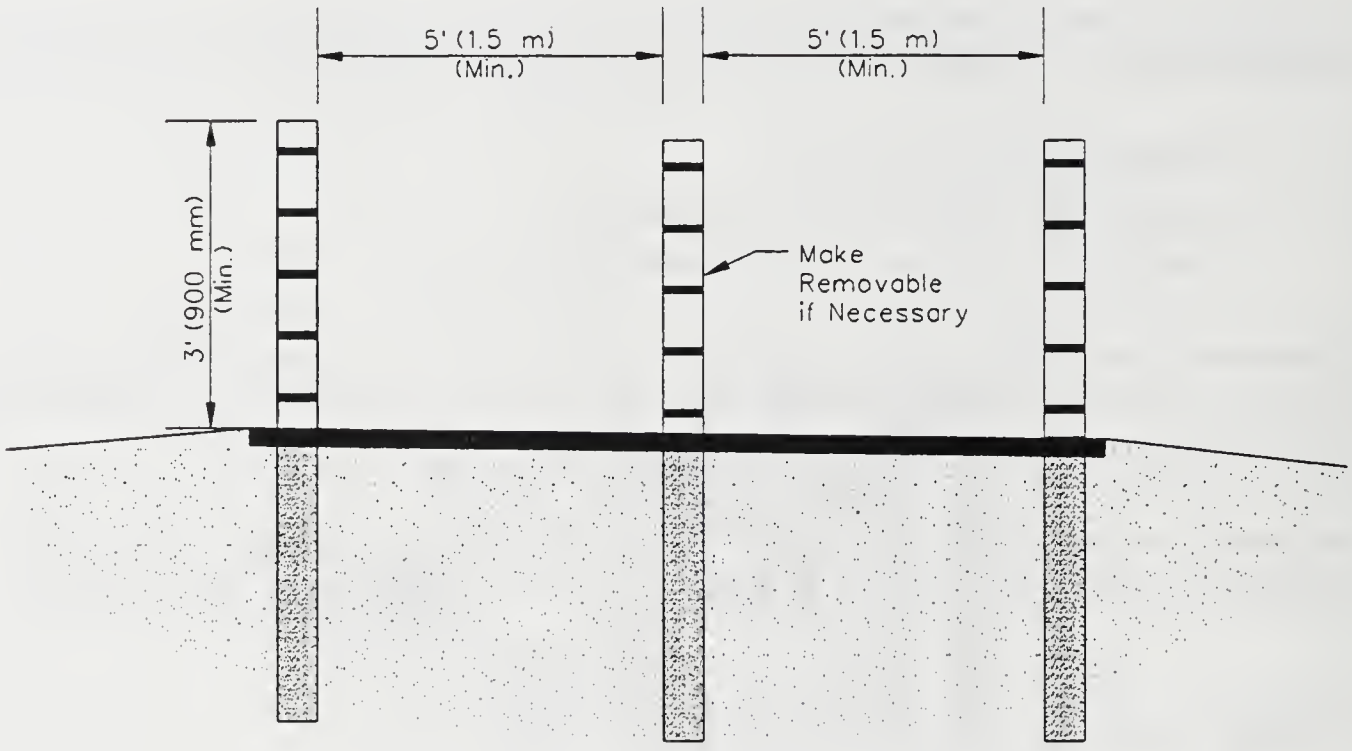
Care should be exercised in the choice of pavement marking materials. Some marking materials are slippery when wet and should be avoided in favor of more skid resistant materials.

17-2.02(n) Lighting

Fixed-source lighting reduces conflicts along paths and at intersections. In addition, lighting allows the bicyclist to see the bicycle path direction, surface conditions, and obstacles. Lighting for bicycle paths is important and should be considered where riding at night is expected (e.g., bicycle paths serving college students or commuters, highway intersections). Lighting also should be considered through underpasses or tunnels and when nighttime security could be a problem (see Chapter 56). Depending on the location, average maintained horizontal illumination levels of 5 lx to 22 lx should be considered. Where special security problems exist, higher illumination levels may be considered. Light standards (poles) should meet the recommended horizontal and vertical clearances. Luminaires and standards should be at a scale appropriate for a pedestrian or bicycle path. Where security is a problem, lighting fixtures should be vandal proof.

17-2.02(o) Restriction of Motor Vehicle Traffic

Bicycle paths often need some form of physical barrier at roadway intersections to prevent unauthorized motor vehicles from using the facilities. Provisions can be made for a lockable, removable post ("bollard") or drop gate to permit entrance by authorized vehicles. The posts should be set far enough back from the edge of the vehicular roadway so as not to constitute a hazard. They shall meet Federal breakaway sign post criteria where susceptible to being struck by vehicles. Where necessary, the post should be permanently reflectorized for nighttime visibility and painted a bright color for improved daytime visibility. When more than one post is used, a 5 ft (1.5 m) spacing is recommended, as indicated in Figure 17-2AQ. Do not use gates that prohibit entry by persons in wheelchairs, cause bicyclists to enter the path around the outside of the gate post, or restrict the movement of any intended users.



Note: Reflectorize where necessary.

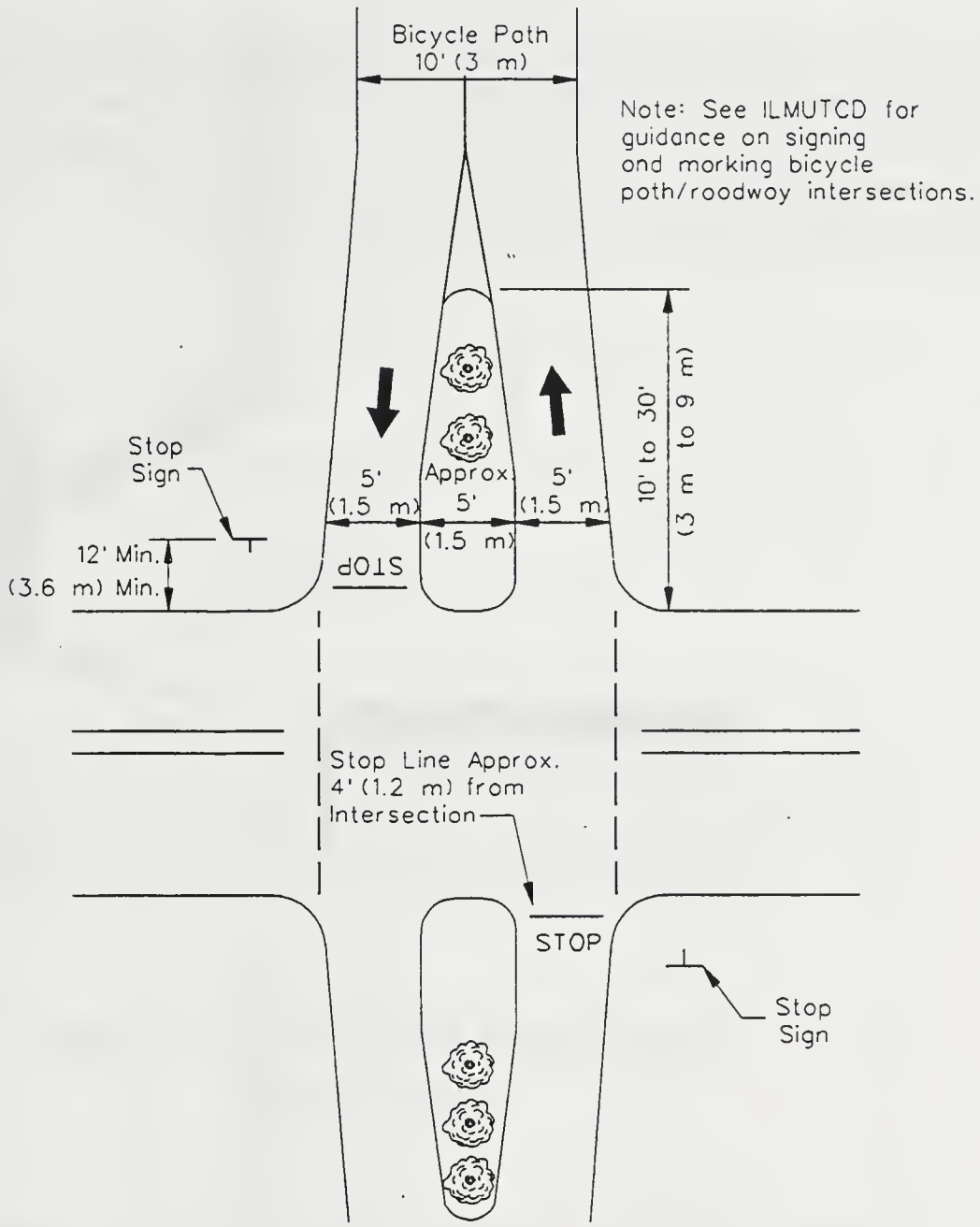
BARRIER POST

Figure 17-2AQ

An alternative method of restricting entry of motor vehicles is to split the entry way into two 5 ft (1.5 m) sections separated by low landscaping as shown in Figure 17-2AR. Emergency vehicles can enter, if necessary, by straddling the landscaping. The higher maintenance costs associated with landscaping should be acknowledged, however, before this alternative method is selected.

17-2.02(p) Pavement Structure

Designing and selecting pavement sections for bicycle paths are in many ways similar to designing and selecting highway pavement sections. A soils investigation should be conducted to determine the load carrying capabilities of the native soil and the need for any special provisions. The investigation need not be elaborate, but should be performed by, or under the supervision of, a qualified engineer. In addition, while loads on bicycle paths will be substantially less than highway loads, design bicycle paths to sustain, without damage, the wheel loads of occasional emergency, patrol, maintenance, and other motor vehicles that are expected to use or cross the path.

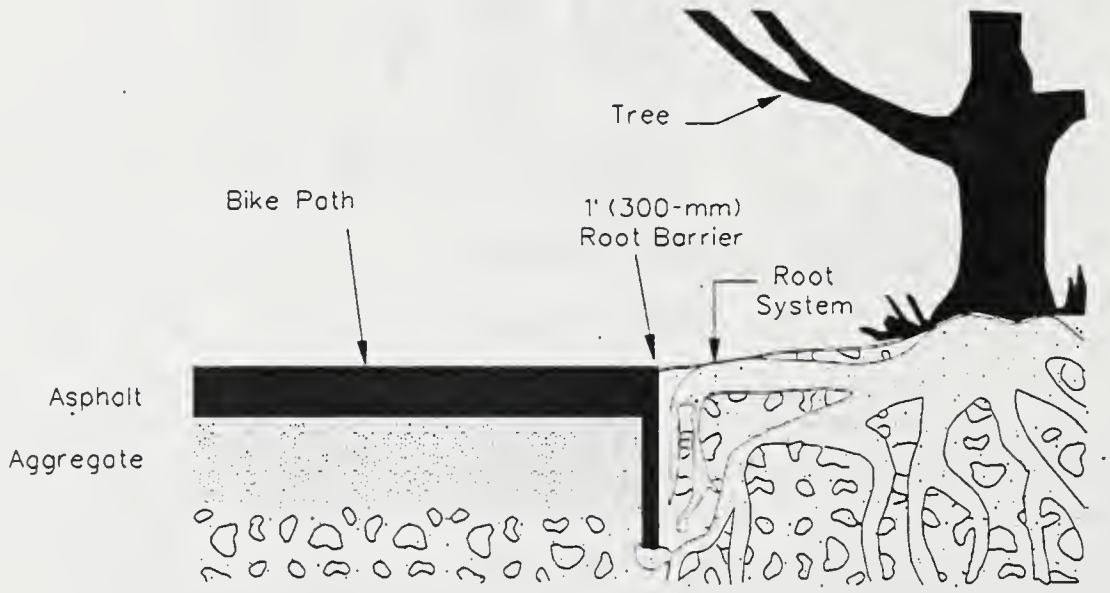


LANDSCAPING DIVIDER

Figure 17-2AR

Give particular consideration to the location of motor vehicle wheel loads on the path. Where motor vehicles are driven on bicycle paths, especially 8 ft (2.4 m) widths, their wheels usually will be at or very near the edges of the path. Because this can cause edge damage that will, in turn, reduce the effective operating width of the path, adequate edge support should be provided. Edge support can be either in the form of stabilized shoulders (e.g., use of geotextile fabric underlay) or in constructing additional pavement width.

Shared-use paths built along streams and in wooded areas present special problems. The roots of shrubs and trees can pierce through the path surfacing and cause it to bubble up and break apart in a short period of time. Preventative methods include: removal of vegetation, realignment of the path away from trees, and placement of root barriers (e.g., a 1 ft (300 mm) deep plastic shield) along the edge of the path as shown in Figure 17-2AS.

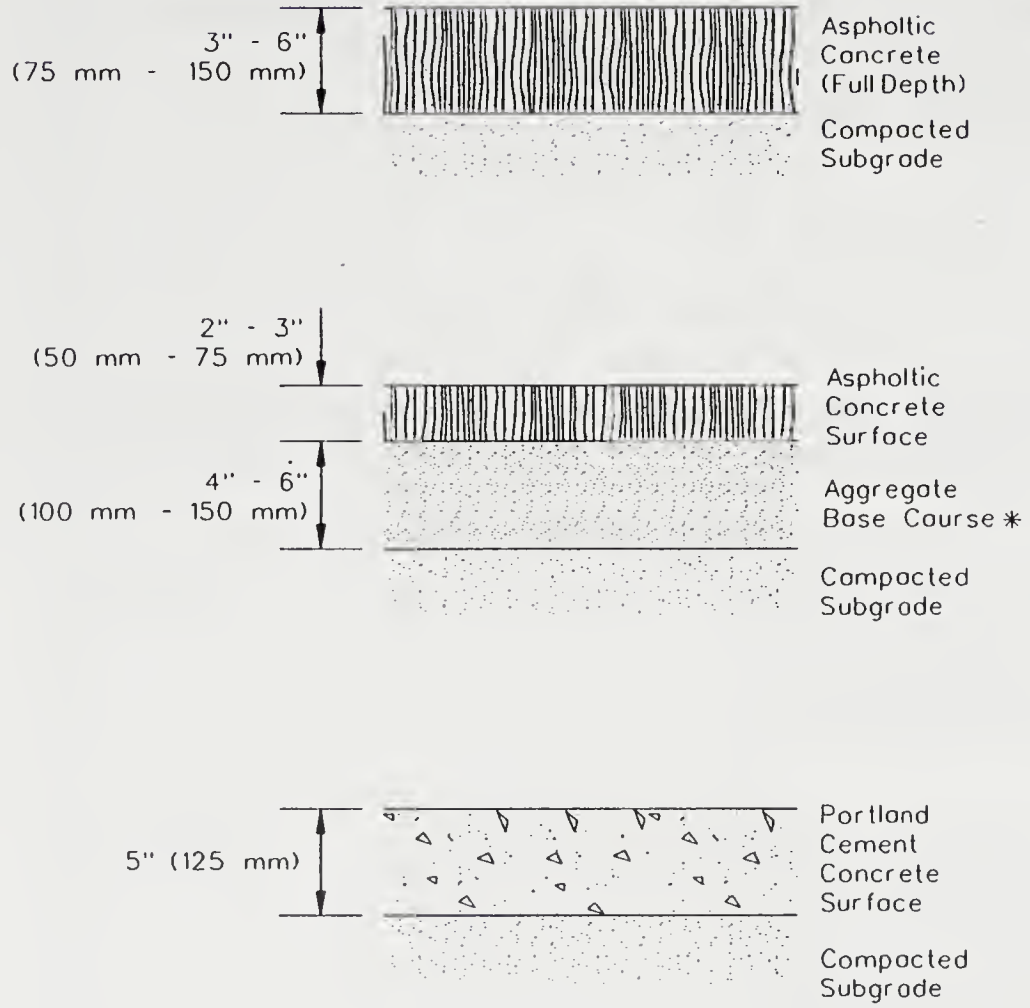


SHARED-USE PATH ADJACENT TO TREES

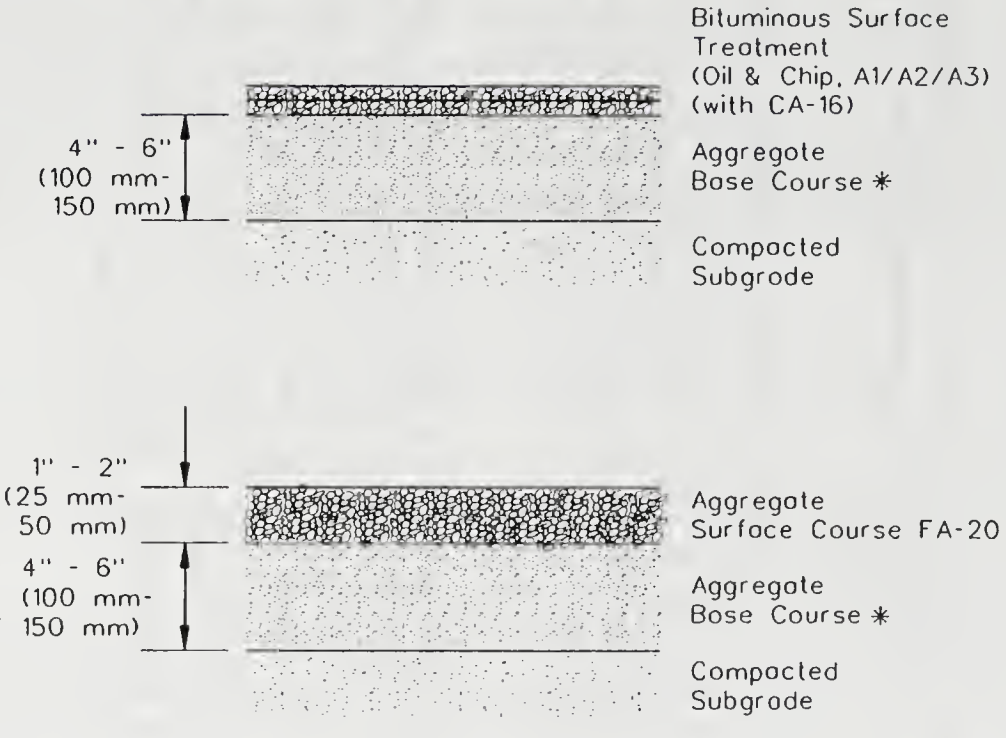
Figure 17-2AS

At unpaved highway or driveway crossings of bicycle paths, pave the highway or driveway a minimum of 10 ft (3 m) on each side of the crossing to reduce the amount of gravel being scattering along the path by motor vehicles. Design the pavement structure at the crossing to adequately sustain the expected loading at that location.

Bituminous pavement surfaces are preferred over those of crushed aggregate because aggregate materials provide a much lower level of service and require substantially increased maintenance over the life of the project. Concrete may offer advantages in wet soil conditions or in areas that may periodically flood. As guidance, Figure 17-2AT provides examples of several acceptable



PAVED PATH CROSS SECTIONS



UNPAVED PATH CROSS SECTIONS

* CA-6 or CA-10

BIKE PATH CROSS SECTIONS

Figure 17-2AT

pavement cross sections. Consider geotextile fabric in areas where the stability of the subgrade is questionable. Fabric offers advantages that include extended pavement life, weed control, and lower maintenance.

In some situations, a bituminous surface treatment (A1/A2/A3) may be adequate for bike paths, considering the limitations of the surface (e.g., bleeding oil on hot summer days). The proper application of this type of surface is very important. Specify a CA 16 aggregate size or smaller. The surface should be rolled and the excess stone should be swept away, preventing accumulation at the outside edges of the bike path. Negotiating loose gravel on a bicycle can be very hazardous.

Crushed aggregate surfaces, while not encouraged because of high maintenance, can provide an adequate surface if prepared properly and routinely maintained. The subgrade should be properly compacted and a geotextile fabric mat used if the soil is soft or unstable. Crushed aggregate surface course (FA 20 or equivalent) should be placed over a base course and properly rolled and compacted. As discussed in Section 17-2.02(h), avoid using these surfaces on grades exceeding 3% and in areas where water overflow would wash away the surface. In these areas, stabilize the surface with bituminous or with an oil/chip combination. Figure 17-2AU provides information regarding the advantages and disadvantages of various bike path surfaces.

SURFACE MATERIAL	ADVANTAGES	DISADVANTAGES
Crushed Aggregate	Soft but firm surface; natural material; moderate cost; rough surface; accommodates some multi-use.	Surface can rut or erode from heavy rainfall; surface softens when set - bike tires, horses will damage surface; regular maintenance to keep consistent surface; replenishing aggregate may be a long-term expense; not for slopes >3%.
Bituminous Surface Treatment (also called Oil & Chip, Chip Seal)	Inexpensive to apply; more stable surface, durable.	Potential for oil bleeding to surface in hot weather, application methods important to minimize loose gravel.
Asphalt	Hard surface; supports most types of use; all weather; does not erode; accommodates most users simultaneously; low maintenance.	Higher installation costs; more costly to repair; not a natural surface; freeze/thaw can crack surface; heavy construction vehicles need access.
Concrete	Hardest surface; easy to form to site conditions; supports multiple use; lowest maintenance; resists freeze/thaw; best cold weather surface; best for wet conditions.	High installation cost; costly to repair; not a natural looking surface; construction vehicles will need access to the trail corridor.

BIKE PATH/TRAIL SURFACE SYNOPSIS

Figure 17-2AU

17-3 BICYCLE OPERATING CHARACTERISTICS

Bicycle operating characteristics and design factors are important elements of design. There are many different types and sizes of bicycles, ranging from children's cycles to tandem units for two riders, as well as buggy carts for transporting children and other items. Typical bicycle dimensions and clearances are shown in Figures 17-3A and 17-3B, respectively.

Characteristics	Dimensions*
Width	2 ft (630 mm)
Length	6 ft (1.8 m)
Height	7 ft (2.2 m)
Vertical Pedal Clearance	0.5 ft (150 mm)

*Note: *If bike trailers are likely, the characteristic width becomes 3 ft – 3.5 ft (1.0 m - 1.1 m) wide and 9 ft (2.7 m) long. The indicated height of an adult bicyclist takes into consideration that the rider may be standing up while riding. Adult bicyclists sit between 5 ft (1.5 m) and 6 ft (1.8 m) above the riding surface while sitting on the saddle.*

TYPICAL BICYCLE AND RIDER DIMENSIONS

Figure 17-3A

Lateral Clearances		Vertical Clearance	
Bike to Parked Car	2 ft (600 mm)	Bike Rider to Overhead Obstruction	2 ft (600 mm)
Bike to Curb Drop-Off	2 ft (600 mm)	**Maneuvering Clearances**	
Bike to Utility Poles, Trees, Hydrants	2 ft (600 mm)	Bike to Pavement Edge	1 ft (300 mm)
Bike to Soft Shoulder	1.5 ft (450 mm)	Bike to Other Bike	2.5 ft (750) mm
Bike to Sloped Drop-Off	1 ft (300 mm)	Bike to Pedestrian	2.5 ft (750 mm)
Bike to Raised Curb	1 ft (300 mm)	Turning Radius	5 ft (1.5 m) (min)

Note: *Because turning radius, sight distance, and braking of bicycles differ significantly from that of motor vehicles, design of bicycle facilities should take a conservative approach. This conservative approach should accommodate differing aspects of bikes, including the fact that riders are of different skill levels.*

BICYCLE OPERATIONAL CHARACTERISTICS

Figure 17-3B

17-4 PEDESTRIAN ACCOMMODATIONS

17-4.01 General

Pedestrian accommodations are an integral part of urban and suburban transportation corridors. They facilitate pedestrian travel and access to public transportation, thereby contributing to alleviation of urban traffic congestion. The most pressing need for accommodation is at points of community development that result in pedestrian concentrations near or along the highway, such as at schools, public transportation stations and stops, local businesses, industrial plants, hospitals, churches, shopping centers, parking lanes, etc. Accommodations can include sidewalks, elevated walkways, grade-separated structures, stairs, curb ramps, and traffic signal devices.

17-4.02 Policies

Consider the travel needs of all users of a transportation corridor when planning transportation improvements. If during the planning phase of a project, pedestrian travel in the vicinity of the project is determined to be sufficient to warrant consideration, provide appropriate accommodations.

Policies relating to construction and maintenance, including sidewalk/curb ramps for the disabled, are addressed in Chapter 58. Financial responsibilities for pedestrian accommodations within Municipalities are addressed in Chapter 5.

17-4.03 Warrants

Pedestrian accommodations will be considered appropriate if they are not already available and any of the following conditions exist:

- there is current evidence of frequent pedestrian activity;
- there is a history of pedestrian-related crashes;
- the roadway improvement will create a safety impediment to existing or anticipated pedestrian travel (e.g., adding lanes so that the improvement itself acts as a barrier to pedestrian traffic);
- there is urban or suburban development that would attract pedestrian travel along the route to be improved;
- pedestrian-attracting development is expected along the route within five years of project completion, either as documented in a local plan or anticipated as a factor of similar development history; and/or

- the roadway provides primary access to a park, recreation area or other significant destination, or across a natural or man-made barrier.

Overpasses and underpasses will be evaluated on a case-by-case basis considering the type of pedestrian travel, travel generators (e.g., schools, factories, stadiums, parks, transit terminals, shopping districts), the amount of anticipated non-motorized traffic, and the safety impacts of not providing the accommodations. Anticipated pedestrian trip length to generators should be 1 mile (2 km) or less and the adverse travel distance alleviated by construction to the facility should be greater than 0.5 miles (1 km).

17-4.04 Design

Sidewalks normally are 5 ft (1.5 m) wide. When obstructions do not allow a width of 5 ft (1.5 m) for a short distance, provide a clear sidewalk width of a least 3 ft (1 m) for adequate passage of pedestrians and the disabled. Sidewalks wider than 5 ft (1.5 m) may be allowable if compatible with the local sidewalk network or if intended to accommodate a wider range of users, such as bicyclists. Facilities intended to also accommodate bicycle travel should follow the guidance in Section 17-2. Typical sections for sidewalks along roadways are presented in Chapter 48. Policies and guides for sidewalk/curb ramps for the disabled are addressed in Chapter 58.

Project limits may be extended beyond highway improvements for reasonable distances to include necessary pedestrian facilities at nearby intersections, to provide access to public transportation facilities, or to avoid short sidewalks gaps. Any such extensions should be reflected in the Phase I report.

17-4.05 Documentation

Document in the Phase I report the reasons for providing or not providing pedestrian accommodations. Include a discussion of the coordination with local officials concerning, at a minimum, the selection of access routes for the disabled. Indicate the location of the ramps to be provided on the Intersection Design Studies. The impact of access routes for the disabled should be assessed in any request for a design exception.

17-4.06 Pedestrian Accommodations During Construction

The *Standard Specifications* addresses pedestrian needs during construction for the typical project. However, added attention is desirable on projects that are adjacent to schools, hospitals, rest homes, businesses, and other developments, and have high volumes of traffic and pedestrians. Special attention also should be directed at maintaining pedestrian access to public transportation facilities at all times during construction. Use the following guidelines in determining the need to include temporary sidewalks as part of PS&E:

- where a known generator such as a school, hospital or neighborhood shopping center, or known facility for the disabled, such as a nursing home, exists;

- if the principal access for pedestrian traffic to a business is by an existing paved surface and the surface will be removed; and

- when the construction sequence will include the removal of existing sidewalks and the new sidewalks will not be constructed prior to a winter shutdown.

Temporary sidewalks shall be a minimum of 3 ft (1 m) in width. Consider wider sidewalks in areas where a high pedestrian volume and/or disabled persons are known to exist. If the temporary sidewalk is to remain in place for more than four weeks, it shall be constructed with a minimum of 2 in (50 mm) of Portland cement or bituminous concrete at the Contractor's option. Otherwise, give the Contractor the option to use 2 in (50 mm) of Portland cement or bituminous concrete or a minimum 3 in (75 mm) compacted aggregate (CA 10 or CA 12), Type B or other similar locally available aggregate approved by the Engineer. The pay item should be Temporary Sidewalk, measured in square feet (square meters), and should include removal after the permanent sidewalks are placed.

17-4.07 Maintenance and Jurisdiction

Jurisdiction and maintenance of pedestrian walkways are considered a local responsibility and should be coordinated with Local Agencies early in the planning process (see Chapter 5).

17-5 REFERENCES

The following are applicable references for bicycle facility accommodation:

1. *Guide for the Development of Bicycle Facilities,* AASHTO, 1999.

2. *Selecting Roadway Design Treatments to Accommodate Bicycles,* Federal Highway Administration, 1994.

3. *Trails for the Twenty-First Century —Planning, Design, and Management Manual for Multi-Use Trails,* Rails-to-Trails Conservancy, 1993.

4. *Arizona Bicycle Facilities Planning and Design Guidelines*, Arizona Bicycle Task Force, 1988.

5. *Bicycle Planning and Facility Workshop Manual*, Northwestern University Traffic Institute.

6. *Illinois Manual on Uniform Traffic Control Devices (ILMUTCD),* IDOT.

7. *National Bicycling and Walking Study: Case Study No. 24 — Current Planning Guidelines and Design Standards Being Used By State and Local Agencies for Bicycle and Pedestrian Facilities*, Federal Highway Administration, 1994.

8. *North Carolina Bicycle Facilities Planning and Design Guidelines*, North Carolina Department of Transportation, 1994.

9. *Oregon Bicycle and Pedestrian Plan*, Oregon Department of Transportation, 1998.

10. *Recommendations for Accessibility Guidelines: Recreational Facilities and Outdoor Developed Areas,* Access Board Recreation Access Advisory Committee, 1994 or subsequent edition.

11. *Standard Specifications for Road and Bridge Construction,* Illinois Department of Transportation.

12. *Warrants for Pedestrian Over and Underpasses,* Federal Highway Administration, 1984, Report # FHWA-RD-84/082.

13. Checklist for Organizations and Public Coordination (Figure 17-1C) addresses:

- League of Illinois Bicyclists, 2935 Barberry Ct., Aurora, IL 60504.
- Illinois Department of Natural Resources, Office of Planning and Realty, One Natural Resources Way, Springfield, IL 62702-1271
- Illinois Trails Conservancy, 144 West Main Street, PO Box 10, Capron, IL 61012
- Chicagoland Bicycle Federation, 650 South Clark, Suite 300, Chicago, IL 60605

All projects involving bicycle accommodation for the Department will be in accordance with Reference publications 1, 2, and 3 above. For projects involving separate bikeways, guidance beyond the AASHTO *Guide* (i.e., Reference Publication 1) is available in Reference Publication 3.

17-6 BICYCLE CHECKLISTS

CHECKLIST FOR BICYCLE TRAVEL GENERATORS IN PROJECT VICINITY

Generators	Yes	NA	Generators	Yes	NA
Residential Areas	☐	☐	Shopping Centers	☐	☐
Parks	☐	☐	Hospitals	☐	☐
Recreation Areas	☐	☐	Employment Center	☐	☐
Churches	☐	☐	Government Offices	☐	☐
Schools	☐	☐	Local Businesses	☐	☐
Libraries	☐	☐	Industrial Plants	☐	☐
Existing Bicycle Trails	☐	☐	Public Transportation Facilities	☐	☐
Planned Bicycle Trails	☐	☐	Other ( )	☐	☐

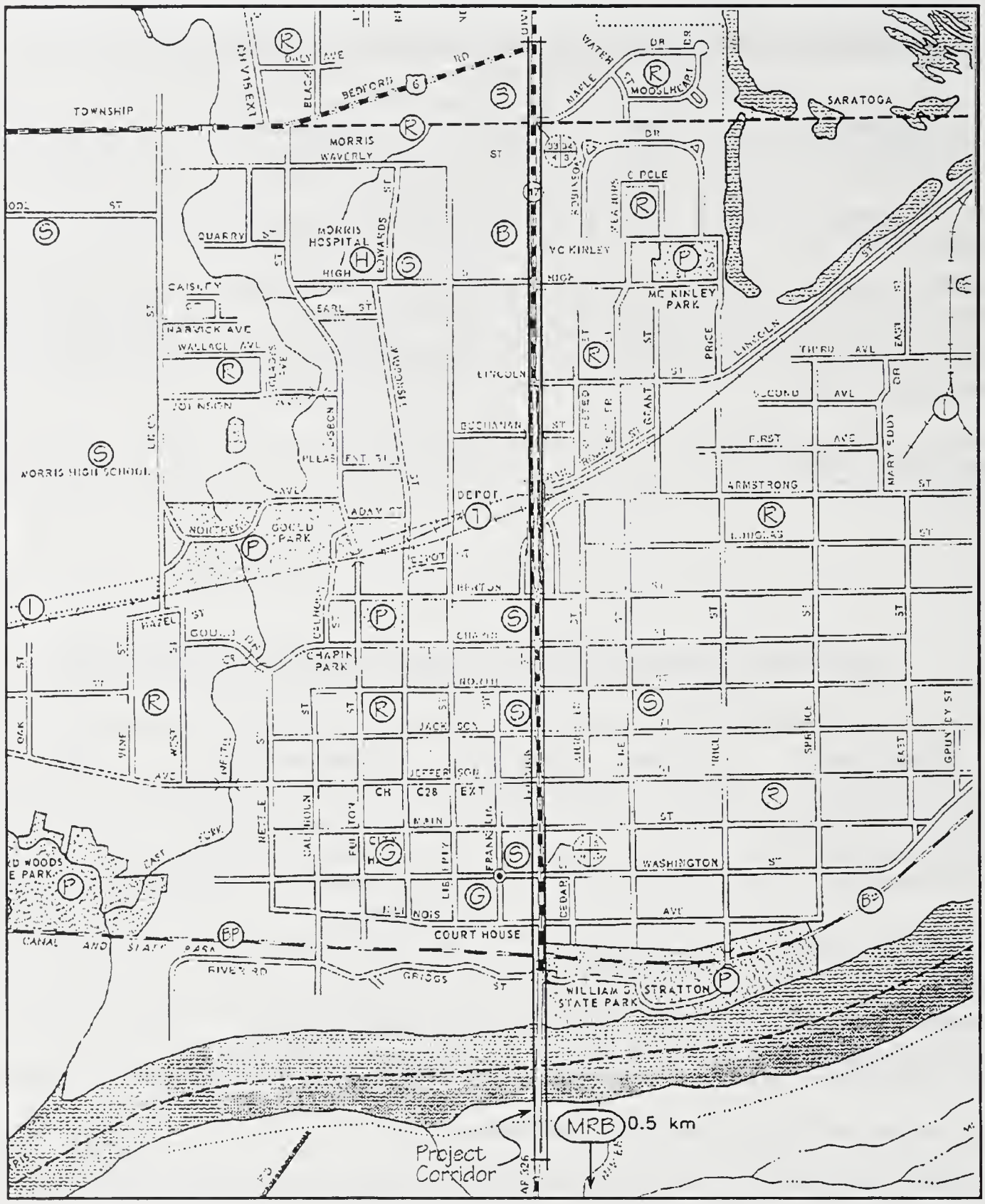
CHECKLIST FOR ORGANIZATIONS AND PUBLIC COORDINATION

Organization	Yes	NA	Organizations	Yes	NA
Metropolitan Planning Organization (if applicable)	☐	☐	League of Illinois Bicyclists	☐	☐
Local Municipalities	☐	☐	Illinois Department of Natural Resources	☐	☐
Park or Forest Preserve Districts	☐	☐	Illinois Trails Conservancy	☐	☐
Sub-Regional Planning Council (as appropriate)	☐	☐	Chicagoland Bicycle Federation (District 1 only)	☐	☐

Organizations and Public Coordination addresses:

- League of Illinois Bicyclists, 417 South Dearborn, Suite 1000, Chicago, IL 60604
- Illinois Department of Natural Resources, Office of Planning and Realty, 524 S. 2nd Street, Springfield, IL 62701
- Illinois Trails Conservancy, 142 West Main Street, PO Box 0454, Capron, IL 61012
- Chicagoland Bicycle Federation, 417 South Dearborn, Suite 1000, Chicago, IL 60604

EXAMPLE OF MAP TO ACCOMPANY CHECKLIST FOR BICYCLE TRAVEL



R	Residential Areas	BP	Existing Bicycle Trails	G	Government Offices
P	Parks	PBP	Planned Bicycle Trails	B	Local Businesses
P	Recreational Areas	M	Shopping Centers	I	Industrial Plants
C	Churches	H	Hospitals	T	Public Transit Facilities
S	Schools	E	Employment Centers	O	Other

FORM FOR BICYCLE TRAVEL ASSESSMENT

Route _____
Section _____
County _____

1) Where would bicyclists cross the project? _____

2) Where would bicyclists need to ride parallel to the project? _____

a) Does the project provide unique or primary access (see Note 1):
   1. Across a river, railroad, highway corridor or other natural or man-made barrier? _____

   2. Into or out of a residential or commercial development? _____

   3. Between communities or other likely significant destinations — such as a university campus or recreation facility? _____

b) Are there any secondary roads parallel to the project that could reasonably be used by cyclists as alternates to access these destinations (see Note 2)? _____

If so, how far from the corridor are these roads? (A key consideration with parallel roads is whether there are significant destinations located on the project corridor that bicyclists would need to access.) _____

3) Do local governmental entities or other organizations have plans for bicycle facilities or generators, such as a park or recreational area that could affect this project or generate additional travel in the project corridor? _____

Notes:

1. *Unique or primary access is defined as access which is not otherwise available within a reasonable riding distance of 1 mile (2 km).*

2. *Secondary roads that could be used as alternate routes are usually within 2-3 blocks of projects in urban areas, within 0.5 miles (1 km) in suburban areas, and within 1 mile (2 km) in rural areas.*

Chapter Eighteen

TRANSPORTATION ENHANCEMENTS

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

Chapter Eighteen
TRANSPORTATION ENHANCEMENTS

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CHAPTER EIGHTEEN

TRANSPORTATION ENHANCEMENTS

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) established a program to set aside 10% of Surface Transportation Program funds for projects that serve to enhance the transportation system. This program was later reaffirmed in the Transportation Efficiency Act for the 21st Century (TEA-21). To allocate these funds to the benefit of the overall transportation system, Illinois created and implemented the Illinois Transportation Enhancement Program (ITEP). The program allows stand-alone ITEP projects that improve the accessibility of the transportation system to a broader range of users and various types of improvements that serve to enhance the aesthetic or functional value of the transportation system.

18-1 ELIGIBLE ITEP PROJECTS

Consider the following excerpt from 23 USC §101(a), as amended by TEA-21, when determining the eligibility of a project for ITEP:

> *"the term 'transportation enhancement activities' means, with respect to any project or the area to be served by the project, any of the following activities if such activity relates to surface transportation: provision of facilities for pedestrians and bicycles, provision of safety and educational activities for pedestrians and bicyclists, acquisition of scenic easements and scenic or historic sites, scenic or historic highway programs (including the provision of tourist and welcome center facilities), landscaping and other scenic beautification, historic preservation, rehabilitation and operation of historic transportation buildings, structures, or facilities (including historic railroad facilities and canals), preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian or bicycle trails), control and removal of outdoor advertising, archaeological planning and research, environmental mitigation to address water pollution due to highway runoff or reduce vehicle-caused wildlife mortality while maintaining habitat connectivity, and establishment of transportation museums."*

Enhancement projects are activities that are over and above routine construction or maintenance. For example, on a highway construction project, enhancement funds could only be used on those elements of the project that were considered *beyond* typical highway improvements. Our policy requires the safe accommodation of pedestrians and bicyclists be given full consideration on all transportation projects. Thus, for new construction and reconstruction projects, routine provisions for bicyclists and pedestrians such as sidewalks, curb ramps, bike lanes, wide curb lanes and shoulders on rural roads, are not considered to be

"enhancements" since IDOT policy (as in Chapter 17) requires their provision as part of addressing the functional and safety needs of the transportation corridor improvement.

Similar improvements to improve bike and pedestrian access or safety may, however, be eligible when they are retrofitted to existing roadway corridors and are *independent* of new highway construction or rehabilitation projects.

The following are the specific project categories for the Illinois Transportation Enhancement Program. Detailed eligibility criteria are shown in the latest edition of the *Illinois Transportation Enhancement Program Guidelines and Application*, available from the IDOT Transportation Enhancement Program Coordinator in the Central Office (OPP) or district, or from IDOT's internet site (www.dot.state.il.us).

1. Provision of facilities for pedestrians and bicycles

2. Scenic or historic highway programs (including the provision of tourist and welcome center facilities)

3. Landscaping and other scenic beautification

4. Historic preservation

5. Rehabilitation of historic transportation buildings, structures, or facilities (including historic railroad facilities and canals)

6. Provision of safety and educational activities for pedestrians and bicyclists

7. Acquisition of scenic easements and scenic or historic sites

8. Preservation of abandoned railway corridors for the conversion and use thereof for pedestrian and bicycle trails (acquisition of corridors)

9. Control and removal of outdoor advertising

10. Establishment of transportation museums

Projects that require the acquisition of land are funded at 50% ITEP, 50% local match. Other eligible expenses are funded at an 80/20 match.

18-2 ITEP PROJECT APPLICATION, REVIEW AND APPROVAL

18-2.01 Application Review and Approval Process

The ITEP is based on a cooperative working arrangement among the Department, the Metropolitan Planning Organizations (MPOs), the Illinois Department of Natural Resources (IDNR), the Department of Commerce and Community Affairs (DCCA), and the Illinois Historic Preservation Agency (IHPA). The Department manages all aspects of ITEP and coordinates project evaluation with the appropriate agencies. The flowchart presented in Figure 18-2A illustrates the ITEP Project Review and Approval Process. The following paragraphs briefly describe the major steps of this process:

1. Projects Within Urbanized Areas. For projects within urbanized areas with populations over 50,000, the MPOs play a primary role in the process, which includes public involvement activities. The MPOs serve as clearinghouses and monitoring agencies for proposed ITEP projects in their respective urbanized areas. The Sponsor (see Section 18-3.01) submits candidate ITEP projects to the Department's Enhancement Program Coordinator in the Office of Planning and Programming (OPP), and the appropriate MPO. Contact these agencies if unsure whether or not a particular project's area is included within an MPO boundary. The MPOs review projects to ensure consistency with regional transportation plans, policies and programs. The sponsor is ultimately responsible for ensuring that approved projects within an MPO area are included in the most current Transportation Improvement Program.

2. Projects Outside Urbanized Areas. In non-urbanized areas, the local or State agency Sponsor is responsible for nominating and submitting its candidate ITEP projects directly to the Enhancement Program Coordinator. See Section 18-3.01 for additional information on qualified Sponsors.

3. Cooperative Review. Upon receipt of the ITEP Project Application Forms, the Enhancement Program Coordinator in the Central Office compiles the information and coordinates all project review and evaluation. The Central Office and the respective district review all candidate projects. Bicycle and pedestrian projects are additionally reviewed by IDNR. Historic preservation projects are also reviewed by IHPA. Projects that may have economic development or tourism benefits are reviewed by DCCA. These agencies will submit their recommendations to the Enhancement Program Coordinator.

4. Project Selection. The projects are evaluated and a prioritized list is developed based on available funding and project merit according to the evaluation and ranking criteria summarized in Section 18-2.02. The prioritized list of ITEP projects then is forwarded to the Enhancement Oversight Committee for review and approval.

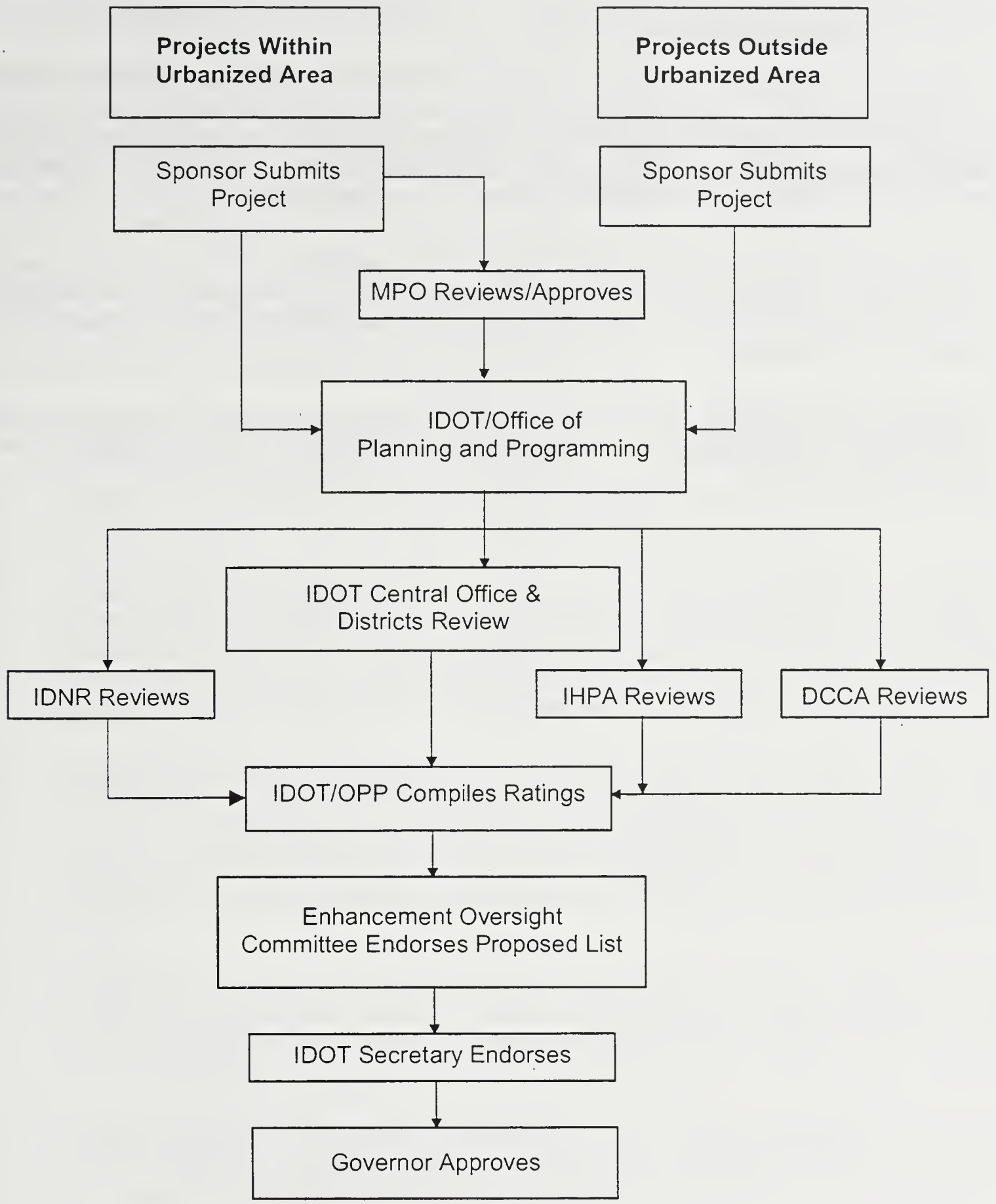
5. Enhancement Oversight Committee Recommendation. An Enhancement Oversight Committee, consisting of representatives from IDNR, IHPA, DCCA, and IDOT, reviews

and forwards a final list of ITEP projects for endorsement by the IDOT Secretary of Transportation.

6. IDOT Secretary of Transportation Endorsement. The Secretary of Transportation reviews the recommended list of ITEP projects and forwards an endorsed list of ITEP projects to the Governor for final approval.

7. Governor Approval. Upon receipt of an endorsement from the Secretary of Transportation, the Governor reviews the final list of ITEP projects for selection and announcement. Final approval rests with the Governor.

8. Project Notification. The OPP publishes a program document which lists approved projects. Ineligible or unsuccessful project sponsors are also notified of the reasons for non-selection. Unsuccessful projects may be resubmitted for consideration during the next submittal period.



ITEP PROJECT APPLICATION REVIEW AND APPROVAL PROCESS

Figure 18-2A

18-2.02 Evaluation and Ranking Criteria

Projects are evaluated and ranked according to their ability to enhance the existing or historic transportation system. In general, projects are evaluated on a broad range of elements, such as their inclusion in a local or regional plan, their environmental and social impacts, predicted usage, relationship to active and/or inactive transportation facilities, their historical significance, etc. Guidelines for the current year are available as noted in Section 18-1.

Projects proposed by the Department, IDNR, DCCA, and IHPA, either as part of planned transportation improvements or as independent projects, will be coordinated with the affected State agencies and MPOs and will be included together with locally sponsored projects to arrive at the final ITEP project list.

Proposed ITEP projects should have concurrence by all associated agency officials at the time of nomination. A re-submission will be accepted for consideration in a future evaluation cycle.

18-3 SPONSORING AN ITEP PROJECT

18-3.01 Qualified Sponsors

All ITEP projects must be sponsored by a State, federal or local government agency (i.e., a unit of government with the authority to levy taxes). District offices or other Department divisions may submit projects for consideration. Not-for-profit agencies may co-sponsor projects with governmental entities.

18-3.02 Sponsor Responsibilities

The Sponsor of an ITEP project is responsible for the following:

1. Project Application, Preparation and Submittal. The Sponsor must complete the application form provided in the latest edition of the ITEP guidelines referenced in Section 18-1. Projects must be submitted to the appropriate MPO or Central Office as defined in Section 18-2.01 or the latest guidelines referenced above.

2. Funding Obligations and Costs. If the project is approved for ITEP funding, the Sponsor is responsible for providing the non-Federal matching funds (generally 20%, or 50% for right-of-way acquisition). The Sponsor also is responsible for providing the appropriate backup data and documentation on the project to satisfy the Department's and Federal audit procedures. Section 18-3.03 provides additional information on project funding.

3. Agreement for Federal Participation. Upon approval of *State agency* (other than Department) projects, BDE will execute an interagency agreement with the Sponsor to delineate respective financial and implementation responsibilities. Upon approval of a *local government* sponsored project, the Bureau of Local Roads and Streets (BLRS) in the respective IDOT district office will execute a local agency agreement with the local sponsor.

4. Right-of-Way. Illinois statutes restrict ITEP construction projects to publicly owned property, permanent easements or, in limited cases, 20-year leases. Agreements with sponsoring agencies that provide for reimbursement of ITEP funds may be required where sufficient ownership interest is not feasible or possible.

5. Project Schedule. The Sponsor is responsible for developing a schedule that identifies the anticipated completion dates for preliminary engineering, land acquisition, environmental clearances, utility adjustments, and construction.

6. Environmental Responsibilities. Environmental assessments, clearances, and mitigation activities that are related to projects intended for an IDOT letting shall be accomplished in accordance with established IDOT procedures during Phase I of the project. All projects, including those intended for a Capital Development Board (CDB) letting, must

address any necessary environmental studies, ensuring that all necessary intergovernmental agreements are executed, acquiring environmental sign-offs by appropriate Federal, State, and local agency(ies), and obtaining all required permits (e.g., EPA, 404). All State agency sponsored projects must be presented by the project Sponsor at an FHWA coordination meeting early in Phase I engineering to determine appropriate environmental category processing. All sign-offs must be accomplished prior to FHWA authorization of construction funds (prior to advertising for construction). The sponsor should be aware that some enhancement projects have been allowed categorical exclusions or programmatic agreements in order to streamline the environmental process. Current guidance on categorical exclusions is available in Chapter 23. Guidance on programmatic Section 4(f) evaluations is provided in Section 26-2.

7. Engineering and Design. The Sponsor will contract for or provide the necessary services for engineering and design of the project, which will be subject to Department approval. All projects must be designed in accordance with appropriate Federal, State, and local criteria. Engineering for bicycle and pedestrian projects sponsored by a State agency will be according to established procedures for an IDOT letting. Selection of consultants for this work will be through an IDOT Professional Transportation Bulletin. BDE coordinates the implementation of engineering and construction phases, with assistance from the district as required with contract negotiation, Phase I review, Phase II plan and specification review, or other phases of work as appropriate or requested. The Bureau Chief of BDE will give Design Approval.

   Historic preservation projects will be designed according to the criteria and guidelines presented in the publication *Secretary of the Interior's Standards for Historic Preservation Projects*. Engineering for historic preservation projects will be done in accordance with CDB procedures, with selection of consultants for this work also in accordance with CDB's selection process. District involvement with these projects is generally limited to coordination with FHWA for environmental determination or other appropriate coordination.

8. Contract Plans/Letting Process. For contract plans and letting process for IDOT let projects, see Chapter 63. For CDB let projects, refer to CDB procedures.

9. Construction and Maintenance. During the construction phase, the Sponsor is responsible for construction supervision and oversight. The Department, IDNR, or IHPA also may periodically inspect the project for contract compliance. Projects channeled through CDB follow CDB's established procedures for construction oversight. Change orders during construction, for all projects coordinated through the Department as well as CDB, require prior Department approval coordinated through BDE. The Sponsor also is responsible for proper maintenance for the life of the project.

18-3.03 Funding Considerations

ITEP follows rules established for Federal and State highway programs, such as the following:

1. Reimbursement of Costs. All approved costs of construction for State agency projects are eligible for up to 80% reimbursement, including preliminary engineering and construction supervision, provided these costs are *incurred after the date of Federal authorization.* The Sponsor cannot incur reimbursable project costs until after the project is approved for funding by IDOT and authorized by FHWA.

2. Use of Federal Funds for Matching Purposes. Federal highway program rules do not allow the use of other Federal transportation funds to match Federal transportation funds, including Transportation Enhancement Funds. The rules do allow other non-transportation Federal funds, such as National Park Service or Corps of Engineers funds, to be used as match.

3. Co-Mingling. Established activities of existing programs may be supplemented by ITEP funds. Different elements of a proposed project could be funded through ITEP as well as other programs (i.e., co-mingling).

4. Right-of-Way Costs. Since, 1998, the cost of purchasing property or rights-of-way is an eligible project cost and is eligible for reimbursement – at 50% reimbursement. The value of property cannot be considered as local match. Any right-of-way purchased in conjunction with project development must follow established Federal-Aid procedures. See the *Land Acquisition Manual*.

5. Contract Administration Options. Federal highway program rules dictate that project costs are paid as work is incurred and then reimbursed at the established percentage (up to 80%) by FHWA. If the project is advertised on an IDOT or a CDB letting, IDOT pays the Federal share of the contractor's interim bills and IDNR or IHPA pays their share directly to the contractor. If an agency's project funds are transferred to IDOT by agreement, IDOT can pay the contractor 100% and charge the agency's appropriation for the local share.

6. Cost Changes. For State agency projects, any requests for additional funding beyond that approved in the original published program - must be coordinated through BDE. Any increases in project cost should be approved by BDE and OPP prior to Design Approval and again prior to FHWA authorization. For local agency projects, requests for additional funding should be coordinated through the Bureau of Local Roads and Streets in the respective district offices. All cost increases will be capped at a maximum of 10 percent of the original grant that was approved.

7. Federal-Aid Day Labor. IDOT may allow a project to be constructed with agency forces using Federal-aid Day Labor procedures on a case-by-case basis.

8. Progress Monitoring. Throughout the process, IDOT will monitor obligation and expenditure of ITEP funds to ensure timely progress.

9. Contract Completion. IDOT will certify completion of the project.

10. Changes in Scope. Changes in scope and locations, subsequent to the original Application Approval for State-sponsored projects, will need to receive concurrence from BDE. BDE will determine whether the scope change also needs concurrence from OPP. For local agency projects, a change in scope must be coordinated through BLRS at each district office.

11. Construction Change Orders. For State agency projects, any change orders during construction must be coordinated through BDE. For local projects, coordinate change orders through BLRS at each district office.

Chapter Nineteen

PUBLIC INVOLVEMENT GUIDELINES

BUREAU OF DESIGN AND ENVIRONMENT MANUAL

Chapter Nineteen
PUBLIC INVOLVEMENT GUIDELINES

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CHAPTER NINETEEN

PUBLIC INVOLVEMENT GUIDELINES

The procedures in Chapter 19 are intended to provide a full opportunity for effective public participation and consideration of highway location and design proposals. In general, they provide for free and open discussion on project alternatives to encourage early resolution on controversial issues. The procedures also reflect coordination with other public agencies, private organizations, and individuals. The public involvement process ensures that potential adverse economic, social, and environmental effects are fully considered in project development. This should result in final decisions that reflect the best overall public interest in providing safe, economic, and efficient transportation with minimal adverse effects.

Chapter 19 applies to the development of all highway projects initiated by the Illinois Department of Transportation.

19-1 INTERAGENCY COORDINATION

19-1.01 General

During the development of a proposed highway project, the Department often must coordinate with a variety of agencies external to the Illinois Department of Transportation. Many of these contacts are informal and are only intended to discuss certain aspects of upcoming highway projects such as potential effects of the project on specific resources or cost participation by local agencies for improvements associated with or necessitated by a State highway project that affects local-system facilities. (Cost participation issues should be addressed with the affected local agencies as early as practical in project development. See Chapter 5.) Some agencies also have opportunities to review packages of information that are circulated for comment as described elsewhere in this *Manual*. In addition, notices of upcoming public involvement activities afford another mechanism for agencies to obtain information on proposed projects. All of these actions contribute to interagency coordination. This section discusses formal interagency coordination through regularly scheduled district coordination meetings (Section 19-1.02) and clearinghouse reviews (Section 19-1.03).

Section 19-1 provides information on interagency coordination within the context of public involvement. See Section 22-5 for more information on interagency coordination in relation to environmental requirements.

19-1.02 District Coordination Meetings

The district conducts periodic coordination meetings, which may involve personnel from the central offices, FHWA, and other agencies, as appropriate. The goal is to coordinate planning; identify social, economic, and environmental impacts; minimize these impacts through mitigation; and develop the best overall solution to satisfy the transportation needs. The coordination meetings may also result in field approvals of Phase I reports.

19-1.02(a) Scheduling Coordination Meetings

The district should schedule coordination meetings on a fixed basis; however, the frequency of meetings may vary among districts. Coordination meetings may be scheduled two to twelve times per year. Each district should review its workload and job progression and then determine the number and frequency of meetings necessary to meet its needs and combine as many coordination activities as practical. BDE will develop an annual coordination meeting schedule in cooperation with districts and FHWA to eliminate meeting conflicts among districts and to allow appropriate central office personnel to be available. The district should schedule reports eligible for field approval for completion prior to coordination meetings to minimize project delays and transmittals to the central office. Distribute a tentative agenda approximately two weeks in advance of each meeting.

19-1.02(b) Appropriate Representation

Invite persons to the meetings who have a role in project development and decision making, such as central office environmental specialists, district specialists and, if applicable, the consultant's project manager, environment leads, and specialists.

If projects to be discussed significantly affect other agencies or require special expertise or coordination, the district should invite the applicable agencies to the coordination meeting. Highlight in the invitations and agendas the projects and issues requiring the expertise of the other agencies. State agencies (e.g., Illinois Department of Natural Resources, Illinois Historic Preservation Agency, Illinois Department of Agriculture, Illinois Environmental Protection Agency) and Federal agencies (e.g., Department of the Interior, Army Corps of Engineers) may be involved frequently. Consultant environmental staff should attend coordination meetings if environmental issues on their projects are an agenda topic.

19-1.02(c) Topics for Discussion

Coordination meetings should address such topics as the need for and adequacy of environmental reports, need for special reports, typical sections, intersection design studies, design exceptions, etc. The scoping of environmental reports (see 40 CFR 1501.7, 23 CFR 771.119(b) and 771.123(b)) is an appropriate topic for coordination meetings. When other

agencies are present, the coordination meeting may serve as the scoping meeting as discussed in Section 24-2, Activity 07, and Section 25-2, Activity 08.

Submit an agenda to the intended participants at least two weeks prior to the meeting. Include the following items in the agenda for each project to be discussed:

- a short description of the project, its location, and the desired action or reason for including the project on the agenda, including environmental issues, as appropriate;
- the route designation and transportation system (e.g., NHS), funding, and anticipated construction year;
- design policy to be used;
- status of environmental surveys; and
- district contact person for the project and, as appropriate, the project consultant.

Also indicate on the agenda projects to be advertised in the Professional Transportation Bulletin and include in the agenda any topics of general concern intended for discussion. Include documentation with the agenda, as necessary, to support the desired action for specific projects.

19-1.02(d) Information Presented

The information presented at a coordination meeting usually depends on:

- the project development stage,
- coverage at previous coordination meetings, and,
- the scope of the project.

A major project on new alignment may involve many topics and presentations at numerous meetings over the duration of the study. If a minor project requires discussion, a brief presentation may be sufficient.

Because several projects may be discussed at each coordination meeting, information that has been previously presented and discussed need not be repeated. However, the meeting should include a brief summary of important points previously discussed and any decisions reached on each project.

If design exceptions will be requested, the district must provide supporting documentation/justification. The supporting documentation/justification for design exceptions ultimately will be included in the Phase I report.

The district should also make available appropriate information on the mitigation of impacts, effects on sensitive areas, detours, and stream crossings. Explain any channel work proposed in stream crossings so that the degree of impact can be determined.

19-1.02(e) Documentation

At all coordination meetings, the district must maintain a record on who attended and what transpired. Although a verbatim transcript is not necessary for coordination meetings, a recording on tape may be useful to the district if questions arise on the accuracy of typed minutes. Prepare minutes promptly and send to each agency that was represented at the meeting. The transmittal letter should describe the process for correction of the minutes and set a time limit for submitting any corrections.

The suggested format for the minutes is shown in Figure 19-1A. Identify each project discussed in the minutes, and provide special attention to any scoping actions because documentation may be required later. Each project should be covered on a separate page(s).

19-1.02(f) Recommended Practices

The following practices are recommended for coordination meetings to improve their effectiveness.

- Use video-teleconference where practical.
- Schedule meetings for projects eligible for field approval prior to or after the regular meeting. Indicate the schedule for these meetings in the agenda and provide appropriate information for action in advance of the meeting.
- Schedule separate meetings for large or complex project issues, including the review of report comments.
- Avoid getting bogged down on minor issues that can be resolved over the phone or within the district.
- Keep the discussion focused on the desired action.
- Use slides, photographs, aerial photos, and other visual exhibits to clarify issues.

MINUTES OF COORDINATION MEETING

DISTRICT 1

May 9, 2002

ATTENDANCE

- Federal Agencies
- State Agencies
- Local Agencies
- FHWA
- IDOT Central Office
- District Office

PROJECT #1

- Project location, identification information
- Description of existing conditions, traffic data, and any high-crash locations
- Description of proposed work and status of development
- Information presented (e.g., on environmental surveys, impacts, mitigation)
- Comments and input received, including scoping actions/information (see Section 22-5.01(c))
- Design exceptions presented and action taken
- Environmental report concurrence

MINUTES OF COORDINATION MEETING FORMAT

Figure 19-1A

- Provide appropriate handouts such as location maps, ADT/DHV schematics, typical section drawings, crash history information, synopsis of environmental issues, and critical path items.

- Submit completed forms for Nationwide Section 404 Permit 23 to BDE prior to the coordination meeting.

- Provide meeting minutes to participants within two weeks following the meeting.

19-1.03 Clearinghouse Coordination

Clearinghouse coordination is now a State-controlled process, which was established after Federal Executive Order 12372 revoked OMB Circular A-95 and offered States and localities the opportunity to initiate and establish their own review procedures and priorities. Under the Order, States can decide which activities to review and how they should be reviewed. The Order encourages States to establish a single point of contact, through which all reviews can be focused. In Illinois, the single point of contact, originally established as the Governor's Office of Planning, has now become the Illinois Department of Commerce and Community Affairs. The review process is similar to that used to comply with OMB Circular A-95. FHWA is obligated to cooperate with the State-established process and provide an explanation if State Clearinghouse comments are not accommodated.

The procedures outlined herein are for Federal-aid projects and for the State Clearinghouse only and do not affect or change procedures related to other regulations such as those pertaining to NEPA, the National Historic Preservation Act, Section 404 Permits, Regional Planning Commissions (Substate Clearinghouses), or Section 4(f). In addition, the Department has developed these procedures in coordination with the State Clearinghouse and, as a result, they apply only to the State Clearinghouse. The districts will perform substate coordination. Because coordination with Substate Clearinghouses varies in different parts of the State, this *Manual* does not describe its coordination. Because the central office review occasionally results in revisions to the information submitted to the State Clearinghouse, BDE recommends that the substate contacts not be initiated until confirmation of the State Clearinghouse submittal is received in the district. This delay allows the district the opportunity to adjust the substate submittal, if necessary, to match the State submittal.

19-1.03(a) General

All submissions to the State Clearinghouse will consist of a Project Notification and Review Form (BDE 2126) and a map that clearly indicates the project's location. Figure 19-1B illustrates the Project Notification and Review form.

Illinois Department of Transportation

(11/02)

Project Notification and Review

1. Legal Applicant / Recipient

a. Applicant Name: ILLINOIS DEPARTMENT OF TRANSPORTATION
b. Organization Unit: DIVISION OF HIGHWAYS
c. Street / P.O. Box: 2300 SOUTH DIRKSEN PARKWAY
d. City: SPRINGFIELD e. County: SANGAMON
f. State: ILLINOIS g. Zip Code: 62764
h. Contact Person: (name & telephone no.)

2. S.A.I. Number

3. Application Date

4. Type of Application ☐ Continuation ☐ New ☐ Renewal ☐ Revision

5. Federal Cat. No. 20.205
Highway Planning and Construction

6. Federal Agency to Review Request: FEDERAL HIGHWAY ADMINISTRATION

7. Program Book No./FY

8. The Applicant Certifies That:

a. To the best of my knowledge and belief, the data in this preapplication / application is true and correct.

b. If required, this application was submitted to appropriate clearinghouses
(1)
(2)

9. Certifying Representative	a. Typed Name and Title	b. Signature	c. Date Signed

10. Title and Description

Route _____ ☐ Early Warning
Limits _____ ☐ Design
_____
County _____ City _____
Section _____
Structure Number _____

11. Proposed Funding

a. Federal	$
b. Applicant	$
c. State	$
d. Local	$
e. Other	$
f. Total	$

☐ Urban	☐ Add Lanes	☐ Traffic Signals	☐ Detour
☐ Rural	☐ Channelization	☐ Widen & Resurface	☐ Endangered Species
ROW _____	☐ Grading	☐ 4 (f)	☐ Historic Site
Easements _____	☐ Intersection Improve.	☐ 404 Permit	☐ In-Stream Work
ADT (Current) _____	☐ Paving	☐ Arch. Survey	☐ Runaround
ADT (Projected) _____	☐ Realignment	☐ Borrow Required	☐ Stage Construction
Length _____	☐ Reconstruct	☐ Channel Change	☐ Tree Removal
Fed. Proj. No. _____	☐ Structure	☐ Const. Crossing	☐ Wetlands
Contract No. _____	☐ Resurface	☐ _____	☐ Hazardous Waste
Maps No. _____	☐ Curb & Gutter	☐ _____	☐ _____

12. General Description

IL 494-07711 Continue on reverse side if needed BDE 2126 (Rev. 1/0[illegible]

(Reverse side of BDE 2126 form contains space for "Continued Description")

Figure 19-1B

At the beginning of each fiscal year, each district should review its entire annual and multi-year programs to determine whether or not contacts with the Clearinghouse will be required for the implementation of its projects. See Section 19-1.03(e) (criteria for determining need for Clearinghouse review) to determine if a Federally funded project requires Clearinghouse review. Small projects not yet initiated may require both an Early Warning and a Design Stage contact, and large projects initiated in previous years may require a Design contact or a two-year update. The scheduling of submittals to the State Clearinghouse should include the time required for review, which ranges from a minimum of 30 days to a maximum of 60 days exclusive of mailing time and central office review.

The District should perform the clearinghouse coordination if a project meets the review criteria (see Section 19-1.03(e)) and is eligible for Federal funds regardless of the programmed funding type. This will enable a project to be cleared for letting if funding should be changed at a later date.

Clearinghouse reviews do not replace or eliminate the need for other coordination that might be required for environmental assessments, historic evaluations, various permits, or involvement of affected agencies, local governments, and land owners. Similarly, exemption from Clearinghouse requirements does not eliminate the need for coordination required by other laws and regulations.

Federal agencies responsible for granting licenses and permits, such as those required by Section 404 of the Federal Water Pollution Control Act, may consult with State and area-wide Clearinghouses and seek their evaluation of impacts prior to granting these licenses or permits. If Clearinghouse coordination is accomplished prior to forwarding a permit request, attach evidence of this coordination to the request. With evidence of Clearinghouse coordination, the permitting agency may forego additional Clearinghouse contacts thus reducing the time required to process the permit.

19-1.03(b) Clearinghouse Procedures

The majority of Federal-aid projects are developed as a Combined Design Report or Project Report, and they will be accompanied by an environmental assessment or excluded from NEPA by category. As a result, the Department considers the processing of these Combined Design Reports or Project Reports typical, and it is described in the following discussion as normal processing. Processing for other reports is described separately.

When a Combined Design Report is initiated, one of the first actions is to notify the Clearinghouse that a Study has begun. The limits and scope of work for a Clearinghouse submittal should be the same as the limits and scope of work for the Phase I Report. This is done through an Early Warning Notice. The district should prepare the Early Warning Notice and should forward four copies to BDE. BDE will review the Notice for compliance with this section and forward it to the State Clearinghouse. The Notice should consist of a completed

Project Notification and Review Form (BDE 2126) and a good-quality map clearly locating the project. Limited detailed information will be available, and many of the blanks will be completed using estimates or preliminary information. Once the Notice has been forwarded to BDE, the district should proceed with work on the project.

It is not necessary to wait for a response. The Clearinghouse will distribute the information to its reviewers and, in approximately 30 days, it will provide a response containing any comments received. When the response is received, the district should address any comments contained therein during the Study. The Early Warning Notice need not be repeated. Early Warning Notices will satisfy Clearinghouse coordination requirements for requesting FHWA authorization on any work that is necessary to obtain design approval.

Prior to project inclusion in the letting schedule, it will be necessary to solicit another Clearinghouse review. This review will be called the Design Stage Sign-off. To avoid delaying project letting, the district should forward four copies of this submittal to BDE immediately after completing the public involvement activities. The submittal to the Clearinghouse should consist of a completed Project Notification and Review Form and a map clearly indicating the location of the project. Instructions on completion of the form are included in Section 19-1.03(d). The review at this stage normally requires about 30 days. On all projects subject to Clearinghouse requirements, a Design Stage Sign-off is necessary to request FHWA authorization on any work subsequent to design approval.

If a project appears in the Construction Contractor's Transportation Bulletin within two years after receipt of the Design Stage Sign-off and proceeds to construction, further contacts with the Clearinghouse are not required. However, if the project does not proceed to construction or does not appear in the Bulletin within two years, the district must initiate an additional contact with the Clearinghouse. This does not apply to projects that are STAGE CONSTRUCTED; i.e., where a portion of the project is constructed and the other portion is not let for a few years. This situation requires that the remaining portion be submitted to the appropriate Clearinghouses if two years have elapsed since the project was last signed-off by the Clearinghouse. An example is a three-mile (five-kilometer) roadway project in which the first mile (1.6 kilometer) of the project is awarded and constructed within two years of the Design Stage Sign-off and the last two miles (3.4 kilometers) are not included on a Bulletin until three years later. This two-mile (3.4-kilometer) portion must be resubmitted to the appropriate Clearinghouse for the Design/Renewal submittal. If any changes have been made to the project, then it will be submitted as a Design Renewal/Revision submittal. The annual review of the Highway Construction Program should include the need for additional contacts at this point in project development. The district should solicit a Design Stage Renewal and/or Revision from the Clearinghouse in time for the project to appear on the scheduled Construction Contractor's Transportation Bulletin without delay. Because the Clearinghouse may require up to 60 days, make submittals to the Clearinghouse no less than 90 days prior to publication of the Bulletin.

The Design Stage Renewal and/or Revision contact should consist of a Project Notification and Review Form (BDE 2126) and a map clearly indicating the location of the project. Update the

information contained in these documents from that which appeared in the previous Design Stage contact. The description should indicate any changes in scope, and the funding blank should indicate the latest available estimate.

19-1.03(c) Projects Not Normally Involving a Formal Phase I Report

Those project types with minor scope and which do not normally require the preparation of a formal Phase I Report will normally be exempt from Clearinghouse coordination requirements. However, if such a project involves the acquisition of additional right-of-way or otherwise fails to meet the criteria for exemption, submit a request for a Design Stage Sign-off to the Clearinghouse similar to that described in Section 19-1.03(b). Also, if two years elapse between the Design Stage Sign-off and the time the project first appears in a Construction Contractor's Transportation Bulletin, the district should submit a Design Stage Renewal and/or Revision.

19-1.03(d) Instructions for Completing BDE 2126 (Project Notification and Review Form)

The Project Notification and Review Form (BDE 2126) provides a transportation-oriented form for use in coordinating with the State Clearinghouse. Generally, the Form will only require the addition of a good-quality map clearly indicating the project location. An appendix is not required. The following instructions apply to the completion of Blanks 1 through 12 in preparing submittals to the Illinois State Clearinghouse for Federal-aid projects. A fully completed Form will facilitate the most expeditious processing of Clearinghouse reviews.

BLANK #1: Legal Applicant/Recipient

a. Illinois Department of Transportation
b. Division of Highways
c. 2300 South Dirksen Parkway
d. Springfield
e. Sangamon
f. Illinois
g. 62764
h. Chief of Program Support Unit, BDE Project Development and Implementation Section, (217) 785-8648

BLANK # 2: SAI Number

For the Early Warning Notice (EWN) only, leave this space blank. Upon receipt of the EWN, the State Clearinghouse will issue a State Application Identifier (SAI) Number for the project. The assigned number will be inserted in this Blank when the project is subsequently submitted to the State Clearinghouse for the Design Stage and any required design renewal or revision submittals.

BLANK # 3: Application Date

Insert the date that the Form is completed. This date will change each time a new submittal is made to the State Clearinghouse.

BLANK # 4: Type of Application

Check "NEW" for all projects which are being submitted to the State Clearinghouse for the first time and do not have an SAI number.

Check "CONTINUATION" for projects which were previously submitted for EWN and are now being submitted for the Design Stage without any changes in scope or work, termini, ROW requirements, environmental or historic impact, etc.

Check "RENEWAL" for projects being submitted because the two-year time limit on the sign-off has expired and the scope of work, termini, ROW requirements, environmental and historic impact, etc., has not changed.

Check "REVISION" for projects being submitted because the scope of work, termini, ROW requirements, environmental and historic impact, etc., has changed.

Check "CONTINUATION" and "REVISION" if both are applicable. Check "RENEWAL" and "REVISION" if both are applicable.

BLANK # 5: Federal Catalogue Number

There are only two Federal Domestic Assistance Catalogue numbers that apply to highways. Almost all IDOT projects will be funded under 20.205, Highway Planning and Construction.

BLANK # 6: Federal Agency to Receive Request

Write out Federal Highway Administration.

BLANK #7: Program Book Number

If the project appears in the current Annual Program Book, enter the program book number. If it does not appear as a construction item but as a land acquisition or preliminary engineering item, enter that number. If it does not appear at all in the current Annual Program Book, then enter the estimated fiscal year in which construction is expected to begin.

BLANK #8: The Applicant Certifies That

a. No entry is required.

b. Projects being submitted to the State Clearinghouse should have one or more substate Clearinghouse names entered if appropriate. For projects being submitted to a substate Clearinghouse, enter the Illinois State Clearinghouse.

BLANK #9: Certifying Representative

a. Type in the name and title of the person who is certifying to the accuracy of the information contained on the Form. This person should be the level of a District Bureau Chief or higher.

b. The signature of that person.

c. The date the signature was entered on the Form.

BLANK #10: Title and Description

Route:	Enter the marked route first or common name of the road if not a marked route. The Federal-aid route may also be useful.
Limits:	This should give the termini of the project, any creek or river bridges involved, etc. This should be the same as that shown in the MAPS file, Program Book, and the PCS system. (Do not use station numbers; most reviewers cannot locate a project by this information.)
County:	Enter the county or counties in which the project is located.
City:	Enter the city or cities that the project may impact.
Section:	Enter the project's section number.
Structure Number:	Enter the structure number or numbers if structures are included in the project.
Early Warning/ Design:	Check the appropriate box.
Urban/Rural:	Check the appropriate box or both.
ROW:	Enter the acres (hectares) of land acquisition required for the project. Include the nature of the taking (e.g., 10 ft (3 m) strip throughout the project length, or land acquisitions concentrated at intersections for additional turning lanes) in the general description at Blank 12.

Easements:	Enter the acres (hectares) of the easement and state if it is a temporary or permanent easement.
ADT: (Current)	Enter the current ADT and, in parentheses, the year projected.
ADT: (Projected)	Enter the projected ADT and, in parentheses, the year projected.
Length:	Enter the length of the project.
Federal Proj. No:	Enter the number if project is a Local Roads project.
Contract Number:	Enter the contract number or numbers applicable to the limits and scope of work on the subject submittal.
MAPS No:	Enter all MAPS project numbers applicable to the contract numbers shown on the Form.
"Add Lanes" through "Widen & Resurf":	Check all boxes that describe activities included in the proposed improvement.
"4(f)" through "Haz Waste":	Check all boxes that describe an anticipated project involvement.
Blank Spaces:	These spaces may be used to add other activities or involvements not listed herein.

BLANK #11: Proposed Funding

The first contact with the Clearinghouse should show the best available cost estimate to complete the entire project including preliminary engineering, right-of-way acquisition, utility adjustments, railroad adjustments, and construction. For all subsequent Clearinghouse contacts, show the latest refinement of that total estimate, especially when "Revision" was marked for Blank 4. Enter the Federal share of the total funding on line a. Enter the State share (because the State is the applicant) on line b. If other agencies or organizations, such as local governments or private businesses, will participate, enter their share on the appropriate line and the grand total on line f.

BLANK #12: General Description

This blank should describe in layman's terms the work to be included in the proposed project. The boxes checked in Blank 10 indicate a general description of the work. Blank 12 should expand on that information further but should be brief to eliminate the need to update the submittal if dimensions of structures, medians, lanes, shoulders, etc., are changed during project development. The description should include the reason for the improvement and the goals to be accomplished. Use the back of the Form if additional space is needed.

19-1.03(e) Criteria for Determining Need for Clearinghouse Review

State Clearinghouse review is required on projects eligible for Federal funds that meet any of the following criteria:

- Upgrade an existing facility or provide new access to an area, in effect consisting of more than rehabilitation or modernization.
- Change the use, scope, or intensity of use of existing facilities.
- Require additional right-of-way.
- Involve potentially significant social, economic, or environmental impacts.
- Require a Federal license or permit.

The following examples are provided for further information and guidance on project types that generally will meet one or more of the criteria for requiring State Clearinghouse review:

- Projects on new alignment.
- Addition of through lanes (either by widening, reconstruction, eliminating parking, changing to one-way couple, or any combination of these).
- Addition of new interchanges to existing freeways.
- Involvement of 4(f), 404 Permits, historic properties, etc.
- Projects likely to precipitate significant changes in land use or development.
- Need for additional right-of-way or permanent easements.
- Projects that significantly increase traffic by eliminating a critical bottleneck.

- Structure replacement or widening when substructure is widened or revised (unless the structure is over a road or railroad).
- Projects involving in-stream work.

State Clearinghouse review is not required on projects that meet all of the following criteria:

- Consist of rehabilitation or modernization of existing facilities.
- Do not change the use, scale, or intensity of use of existing facilities.
- Do not require additional right-of-way.
- Do not involve the use of Federal funds.

The following examples are provided for further information and guidance on project types that generally will not meet the criteria for State Clearinghouse review (provided the projects do not involve additional right-of-way):

- Channelization of intersections, including turning bays.
- Modification of traffic signals and control systems.
- Intersection approach lane widening.
- Intersection widening to include turn bays.
- Traffic control signs and markings.
- Pavement skid treatment by overlay or grooving.
- Highway lighting and landscaping.
- Pedestrian over or under crossing structures.
- Structure widening for safety clearances and increased lane widths if substructure remains unchanged.
- Railroad-highway crossing warning devices.
- Installation of breakaway signs or lighting supports, fences, impact attenuators, guardrails, median barriers.
- Structures that are over roads or railroads.

19-1.03(f) Agencies Who Review IDOT State Clearinghouse Submittals

The following agencies are provided copies of project notifications by the State Clearinghouse. Area-wide clearinghouses receive notices even though IDOT district offices have accomplished coordination:

- Corp. for National Community Services
- Illinois Housing Development Authority
- U.S. Department of Health & Human Services
- Illinois Dept. of Military Affairs
- Illinois Air National Guard
- Illinois Dept. of Corrections
- Illinois Dept. of Rehab tion Services
- Illinois Environmental Protection Agency
- Illinois State Fire Marshal
- Illinois Historic Preservation Agency
- Intergovernmental Cooperation Commission
- Illinois State Police
- Illinois Dept. of Transportation (Highways)
- Illinois Dept. of Transportation (Aeronautics)
- Illinois Dept. of Human Services
- Illinois State Board of Education
- Illinois Capital Development Board
- Illinois Secretary of State
- Illinois Dept. of Agriculture
- Illinois Dept. of Natural Resources (Planning)

19-1.03(g) Substate Clearinghouses in Illinois

The following lists the substate clearinghouses currently recognized in Illinois:

Clearinghouse No.	Name
1.	Northeastern Illinois Planning Commission
2.	Bi-State Regional Commission
3.	Tri-County Regional Planning Commission
4.	McLean County Regional Planning Commission
5.	Champaign County Regional Planning Commission
6.	Macon County Regional Planning Commission
7.	Springfield-Sangamon County Regional Planning Commission
8.	East-West Gateway Coordinating Council
9.	Greater Egypt Regional Planning & Development Commission
10.	Southeastern Illinois Regional Planning & Development Commission

11. Greater Wabash Regional Planning Commission
12. South Central Illinois Regional Planning and Development Commission
13. Southwestern Illinois Metropolitan & Regional Planning Commission
14. Kankakee County Regional Planning Commission
15. Western Illinois Regional Council
16. Two Rivers Regional Council of Public Officials
17. West Central Illinois Valley Regional Planning Commission
18. Southern Five Regional Planning District & Development Commission
19. North Central Illinois Council of Governments
20. Logan County Regional Planning Commission
21. Morgan County Regional Planning Commission

County	No.	County	No.
Adams	16	Marshall	19
Alexander	18	Massac	18
Bond	13	McDonough	15
Brown	16	McHenry	1
Bureau	19	McLean	20
Calhoun	17	Mercer	2
Champaign	5	Monroe	8
Christian	17	Montgomery	17
Clinton	13	Morgan	21
Cook	1	Peoria	3
DuPage	1	Perry	9
Edwards	11	Pike	16
Effingham	12	Pope	10
Fayette	12	Pulaski	18
Franklin	9	Putnam	19
Gallatin	10	Randolph	13
Greene	17	Rock Island	2
Hamilton	10	St. Clair	8
Hancock	15	Saline	10
Hardin	10	Sangamon	7
Henderson	15	Schuyler	16
Henry	2	Shelby	17
Jackson	9	Stark	19
Jefferson	9	Tazewell	3
Jersey	17	Union	18
Johnson	18	Wabash	11
Kane	1	Warren	15
Kankakee	14	Washington	13
Lake	1	Wayne	11
Logan	20	White	11
Macon	6	Will	1
Macoupin	17	Williamson	9
Madison	8	Woodford	3
Marion	12		

Note: Figure 19-1C contains an alphabetical list of counties covered by substate clearinghouses. The number beside each county represents the clearinghouse of which it is a part.

COUNTIES COVERED BY SUBSTATE CLEARINGHOUSES

Figure 19-1C

19-2 REQUIREMENTS FOR PUBLIC INVOLVEMENT PROGRAMS

19-2.01 Federal Law

Section 128 of Title 23 of the United States Code specifically requires:

> *Any State highway department which submits plans for a Federal-aid highway project involving the bypassing of, or going through, any city, town, or village, either incorporated or unincorporated, shall certify to the Secretary that it has had public hearings, or has afforded the opportunity for such hearings, and has considered the economic and social effects of such a location, its impact on the environment, and its consistency with the goals and objectives of such urban planning as has been promulgated by the community. Any State highway department which submits plans for an Interstate System project shall certify to the Secretary that it has had public hearings at a convenient location, or has afforded the opportunity for such hearings, for the purpose of enabling persons in rural areas through or contiguous to whose property the highway will pass to express any objections they may have to the proposed location of such highway. Such certification shall be accompanied by a report that indicates the consideration given to the economic, social, environmental, and other effects of the plan or highway location or design and various alternatives which were raised during the hearing or which were otherwise considered.*

Federal law thus requires that public hearings be held or offered under certain circumstances, whether or not the public displays an interest in the project.

19-2.02 Definition and Application

For the Division of Highways to determine when a public hearing or an offer for a public hearing is required to comply with the first part of Section 128 of Title 23 USC, the Division must define what is meant by the *bypassing of or going through any city, town, or village*. The Department interprets the phrase to denote three characteristics of projects to which it will apply:

- large size and effect,
- involvement of long-distance through traffic, and
- involvement of population centers or concentrations of people.

Projects that pass through or bypass communities involve a considerable amount of traffic which is not local but which is passing through the area. This is typical of routes with classifications of trunk highway or major highway (i.e., arterials) and perhaps, in some cases, area service roads when small towns or villages are involved. These projects generally involve the choice of different corridors or locations for the improvement. The Department interprets that lesser projects were not intended for inclusion. Because the reference is to projects that affect cities, towns, and villages, the law seems to be concerned with a project's effect on a

community as a whole. The concern for populated areas is further emphasized by the requirement to comply or coordinate with *urban* planning.

For the purpose of determining the need for the holding or offering of a public hearing on projects proposed by the Division of Highways, Section 128 of Title 23 of the U. S. Code is defined to mean that a public hearing shall be held or offered on all projects that involve the relocation of marked route (State highway system) traffic through or around any city, town, or village. This is interpreted as requiring the holding or offering of a public hearing on projects such as:

- a new bypass around a community,
- a new marked route going through a community,
- the relocation of an existing marked route from one street to another which did not previously carry marked route traffic (with or without additional right-of-way),
- changing to a one-way couple which will use a street that did not previously carry marked route traffic (with or without additional right-of-way), and
- the reconstruction of an existing marked route with additional through traffic lanes through town (included because a reasonable alternative would be a bypass or one-way couple).

Projects such as the following will not require the holding or offering of a public hearing as a result of 23 USC 128:

- upgrading an existing marked route to current design criteria for 20-year traffic including the acquisition of additional right-of-way, but not including additional through traffic lanes;
- intersection improvements including signals, throat widening, adding turn lanes, and other channelization;
- widening less than a one-lane width and resurfacing, with or without additional right-of-way;
- changing from open ditches to closed drainage; and/or
- projects in rural areas which do not pass through or bypass a city, town, or village.

Department policy is to provide all interested persons an opportunity to become acquainted with highway proposals of concern to them and to express their views at those stages of a proposed development when the flexibility to respond to those views still exists. Accordingly, the Illinois

DOT may require public involvement activities in addition to the holding or offering of public hearings on Federal-aid projects. Also, the Department *requires* other public involvement activities on Federal-aid projects which require additional right-of-way, even though Federal law does not require the holding or offering of a public hearing.

19-2.03 FHWA Environmental Regulations

In accordance with the FHWA Regulations on Environmental and Related Procedures (23 CFR 771), the Department will hold one or more public hearings or offer the opportunity for hearing(s) to be held at a convenient time and place for any Federal-aid project which:

- requires significant amounts of right-of-way (see Section 19-2.04);
- substantially changes the layout or functions of connecting roadways or of the facility being improved (see Section 19-2.05); or
- has a substantial adverse impact on abutting property, otherwise has a significant social, economic, environmental or other effect or for which FHWA determines that a public hearing is in the public interest (see Section 19-2.06).

The following sections provide further guidance on the application of these criteria. If the district determines that the application of these criteria does not indicate sufficient impacts or changes to warrant a public hearing, consider the need for other forms of public involvement and provide opportunities as appropriate (see Section 19-3).

19-2.04 Significant Right-of-Way

When a project is planned for new location, it will involve a significant amount of right-of-way and have considerable impact on the area in which it is located. For those projects that basically use the existing alignment with minor relocations or require additional strips of right-of-way, the district must consider several factors in determining whether or not the taking is significant. When it is determined to be significant, a public hearing must be held or offered.

19-2.04(a) Quantity

The first factor to consider is the quantity of land to be acquired. The significance of the quantity will vary depending upon the character of the surrounding land. In rural areas, the acquisition of ten to 20 acres (four to eight hectares) for a project several miles (kilometers) in length may be insignificant. In urbanized areas, takings involving less than one acre (one-half hectare) might be significant if high-cost properties will be affected. In suburban areas each location must be evaluated separately considering the density of population, the remaining open space available, and the impact on improvements that might be located on any of the properties affected.

19-2.04(b) Number of Owners

The significance of right-of-way takings can also be judged by the number of property owners involved. There is no specific number for which a public hearing is required; however, the number does affect the scope of work required for involvement activities. As a minimum, the district must contact individual property owners from whom land will be acquired during the project development stage. At some point, it is practical to hold one meeting rather than to separately contact all of the property owners involved. Generally, separate contacts of more than six to eight property owners is not as cost effective as offering a public hearing, holding an informational meeting, or holding an open house in a van, trailer, or other facility.

19-2.04(c) Usage

The use of the property to be acquired can result in a significant impact even if the number of owners is small. If a property proposed for acquisition is used as a recreational area or a wildlife refuge, or if it is part of a historic site, it may be protected by Federal law. The acquisition of such protected properties requires specific procedures (see Chapter 26) that are designed to protect and preserve the character and use of these properties. Other effects that might be considered significant are takings that will impact improvements on the property. A typical example is the taking of storage tanks or pumps from service stations at intersections. Although the property taking might be minimal, the impact on the business, and perhaps the neighborhood, may be considered significant. Other situations might involve water supplies or power supplies feeding particular communities or neighborhoods, or small takings along a street that might affect a neighborhood or community commercial area.

19-2.05 Changes in the Layout or Function

Projects that change the layout of a facility or the layout of the roads and streets that connect to it could have considerable impact upon abutting properties and users of the facility. Generally, changes in layout will involve the acquisition of additional right-of-way, and the district should consider the factors discussed in Section 19-2.04. Another factor includes adverse travel and service to abutting properties, which usually result in considerable public interest. The development of a public involvement program is warranted to address these impacts and, if substantial changes will occur, a public hearing must be held or offered.

Changes in the function of a street or highway, especially when not accompanied by the acquisition of additional right-of-way, result in more subtle impacts to abutting property owners and other citizens. These impacts may be more difficult to recognize and, whether real or perceived, may create considerable public interest in a particular highway project. The district should carefully consider this when determining the need for a public involvement program or public hearing.

There are several changes that are sufficient to cause a change in the function of a facility or connecting roads and streets. These changes do not necessarily require the acquisition of additional right-of-way, but they alter the character of use such as changing from local access to through traffic. The following is a list of typical actions that are considered changes in function:

- Changing from two lanes to four or more lanes.
- Changing from no median or a flush median to a raised median.
- Changing to a one-way couple that involves a street not previously carrying through traffic.
- Changing access control.
- Addition of a tall median barrier restricting pedestrian crossings.
- Fencing the right-of-way line.
- Removal of on-street parking.

The reverse of these actions also constitutes a change in the function.

Changes in the function may result in a number of impacts that create considerable controversy or public interest. The following lists typical impacts that may result from the changes in the function of a facility or its connecting roads and streets:

- Change in traffic volume.
- Change in the type and character of traffic, such as volume of trucks, local or through traffic, low- or high-speed traffic.
- Change in commercial or residential development affecting the neighborhood character.
- Change in property values.
- Change in pedestrian accessibility.
- Change in travel patterns or distance.

19-2.06 Social, Economic, and Environmental Effects

Any project which will cause a substantial change in the social, economic, or environmental setting in which the project is located could be considered sufficient cause for designing and

implementing a public involvement program. In determining whether or not a hearing is warranted consider the following factors:

1. The effect on regional and community growth of the area including general plans, proposed land use, total transportation requirements, and the status of the planning process.

2. The conservation and preservation of natural resources and our national heritage including park and recreational facilities, wildlife and waterfowl areas, historic and natural landmarks, prime farmland, and the ecology of the project area.

3. The effect on local government and public facilities and services including religious, health, and educational facilities, public utilities, fire protection and other emergency services, and local transportation facilities.

4. Community cohesion including residential and neighborhood character and stability, highway impacts on minority, low-income, and other specific groups and interests, and effects on tax base and property values.

5. Displacement of people, businesses, and farms including relocation assistance, and the business and economic climate of the area including employment gains and losses and access to work locations.

6. Air, noise, and water pollution including consistency with approved air quality implementation plans, noise abatement criteria, and water quality standards.

7. Aesthetic and other values including visual quality (e.g., such as "view of the road" and "view from the road") and the joint development and multiple use of space.

The district should consider the impact of construction activities including detours and road closures and the resultant impact after completion of the improvement.

If adverse impacts, which are considered significant, occur in any of these categories, a public hearing must be held or offered. For additional guidance on impacts and their significance, see Part III of the *BDE Manual* and the *Air Quality Manual*, the *Water Quality Manual*, the *Socio-Economic Impact Assessment Manual*, the *Traffic Noise and Vibration Manual*, and the *Ecological and Natural Resource Manual*.

19-2.07 General Public Interest

Public interest in a project or program of projects can be sufficient to warrant the development of a public involvement program, including a public hearing not otherwise warranted under Sections 19-2.04, 19-2.05, or 19-2.06. This is more likely to occur when a program of projects

is involved. Although individual projects may not be critical, the program as a whole may cause cumulative impacts sufficient to warrant a separate involvement program. Significant program impacts generally relate to communities as a whole with effects across the spectrum of social, economic, and environmental character. A program of projects in this case may include several projects in and/or near a single urban area or within a single county and need not encompass the entire district.

When a program or series of projects will be initiated in a general locality, much of the controversy or antagonism can be averted by providing some advance notice and a public forum for the citizenry to receive information about the projects and to comment where appropriate. An effective public involvement program can consolidate overall public support and contribute significantly to the early completion of projects with the additional benefit of a positive attitude towards the Department.

19-2.08 Road Closures

When the Department proposes to close a road to eliminate an at-grade crossing or junction with an Interstate highway or a highway where the authority to control access has been exercised to permit access only at certain public roads, 605 ILCS 5/8-106 (Illinois Compiled Statutes) requires that a *public hearing* be held to consider the road closure. Such a road closure hearing must be held in the county where the closing is situated and must consider the needs of local traffic and the effect of the closing on other highways in the locality. The preparation of final construction plans shall not begin until road closure hearings have been held. See Chapter 11 for more information on road closures.

Road closure hearings may be held in conjunction with other required hearings. If the discussion of road closures will extend the length of the presentation beyond the time limits discussed in this Section, separate hearings may be necessary. Because road closures should be discussed in environmental reports, the district should schedule road closure hearings prior to the preparation of the final report if not combined with other hearings. Changes in proposed road closures may be sufficient grounds for preparing revised or supplemental environmental reports. Hearing announcements should be in conformance with Section 19-4.01.

19-2.09 Corridor Protection

Section 4-510 of the *Illinois Highway Code* (605 ILCS 5/4-510) provides a means of protecting the right-of-way for future additions to State highways from future developments through the preparation and filing of a map showing the location and approximate widths of the rights-of-way needed for future additions (see Section 12-6). When the Department intends to invoke this provision, it must hold a public hearing in or near the county or counties where the land to be used is located and must publish notice of the hearing in a newspaper or newspapers of general circulation in the county or counties involved. If a public hearing will be held in conjunction with the location and design studies for a project, it can also serve as the hearing required for

corridor protection under 605 ILCS 5/4-510. As an alternative, the Department may hold a separate hearing specifically to receive testimony regarding the corridor protection map. For any hearing intended to fulfill the requirements of 605 ILCS 5/4-510, the notice(s) announcing the hearing should indicate that intent (see Section 19-4.01(c)). The *Land Acquisition Manual* describes the procedures and exhibits needed to file a Corridor Protection Map.

19-2.10 Accessibility

Executive Order #5 (1979) requires all meetings or conferences conducted by Departments under the jurisdiction of the Governor to be held in a public or private place that is accessible to persons with a disability consistent with the Accessibility Standards prepared by the Capital Development Board unless there are compelling reasons dictating otherwise. The Order further requires that notices advise persons with a disability to promptly inform those responsible for conducting the meeting or conference of their anticipated attendance. Upon notification, meeting organizers shall provide qualified interpreter services for the hearing-impaired and shall make essential materials available in a form usable by the visually impaired as needed.

19-3 DESIGNING PUBLIC INVOLVEMENT PROGRAMS

Section 19-2.01 quotes the US Code requirements for holding or offering public hearings for Federal-aid highway projects. When hearings are held, the US Code also requires that transcripts must be submitted. For Federal-aid highway projects, these transcripts are submitted to FHWA with the Final Environmental Impact Statement or recommendation for a Finding of No Significant Impact, in accordance with 23 CFR 771, FHWA's "Environmental Impact and Related Procedures."

23 CFR 771.111 provides that each State must have procedures approved by FHWA to implement a public involvement/public hearing program pursuant to 23 USC 128 (public hearing provisions of the Highway Code) and 40 CFR 1500 through 1508 (CEQ Regulations). States have latitude in designing their public involvement programs provided they meet the requirements of 23 CFR 771.111.

Because Federal requirements do not specify the exact number, format, or timing of the public hearings for all highway projects, the States may determine the need for public hearings and their format. Other public involvement activities may be used where hearings are not specifically required by law or in addition to public hearings. This *Manual* does not provide a fixed format or schedule of public involvement activities because a tailored approach is recommended to fit each project and achieve maximum effectiveness. An early activity of the location team will likely be to design and schedule a public involvement program for the project. The program should be prepared in writing and made a part of the project file. The program may range from personal contacts with affected property owners to a series of formal public hearings. For an individual project, it may involve any one format or combination of formats as discussed in Section 19-3.02. The location team may design other formats when special measures are needed to meet a specific situation and to elicit the greatest response from the public. A public involvement program should be dynamic and flexible. Following the completion of each activity, the district should study the results to determine if the original assessment of the needs is accurate and whether the remaining portions of the program will adequately address those needs. When a change is proposed, revise the written program in the project file accordingly.

19-3.01 Scheduling the Program

Public involvement activities may begin shortly after the initiation of the Corridor Study and continue through the Corridor and Design Study to near the completion of the Design Study Report. The activities may be to gather information from the public, inform the public, confirm the accuracy of information, and determine public reaction. Some formats will require the use of a meeting place in the vicinity of the improvement. Because an inappropriate meeting can have a significant adverse effect on public involvement activities, the district must make available adequate space and meeting facilities for accommodating the public. Facilities of the size necessary to accommodate public involvement activities for highway projects usually are in such demand that making a reservation well in advance of the scheduled use is recommended.

Accordingly, the location team must develop a proposed schedule for both the Corridor and Design Study and determine tentative dates for conducting public involvement activities. The team should check with the facility operator to determine how early the hall should be scheduled to ensure its availability.

19-3.01(a) Separate Corridor and Design Phases

Federal-aid projects which involve both a corridor phase and a design phase must have, for each phase, at least one public involvement activity that is open to the general public and advertised via local media in advance. If the project bypasses or passes through any city, town, or village, at least one of the involvement activities must be a public hearing with a transcript. (The "open house" public hearing format, which includes preparation of a written record of comments received and views expressed, may be used to satisfy this requirement.) The scope of projects with separate corridor and design phases will often require more than the minimum number of public involvement activities.

The district may schedule public involvement activities to aid in:

- developing alternatives;
- confirming interpretations of previous inputs;
- taking official testimony and comments;
- gathering data on the makeup of neighborhoods, community values, and concerns; and
- obtaining the general public reaction to the project.

Certain information may be more accurate and useful if gained from personal individual contacts without the involvement of larger groups of people. Informal formats are probably most suited to gathering data because they eliminate speaking before large groups and other intimidating characteristics of larger, more formal gatherings.

As the location team begins to develop project alternatives, it may be useful to gain public input on the trade-offs that must be made in choosing among alternatives. This may be obtained through conversations with individuals or small groups. Workshops are also effective in obtaining public input on trade-offs. They must, however, be conducted by experienced, knowledgeable leaders with appropriate materials available so that participants fully understand the project goals and the problems to be addressed.

If a public hearing will be held during the design stage, it is not necessary to do so at the corridor stage. There are occasions, however, when it is beneficial to the Department to have a public hearing with a transcript so that all comments and input can be recorded and addressed officially. The district should consider public hearings when there is significant controversy or emotional issues, organized opposition, or the possibility of legal action. Some members of the public may believe they have not had an adequate opportunity to comment or their comments were not given serious consideration if they are not recorded as a part of a transcript at a public

hearing. In these cases, the holding of a public hearing and the recording of testimony may satisfy a certain segment of the public's need to be recognized.

Subsequent to a decision on corridor selection and prior to initiating the Design Study, it may be appropriate to schedule some public involvement activity to announce the results of the Corridor Study and to explain the activities that will follow during the Design Study. This is especially true if there has been significant public involvement and interest in the Corridor Study.

During the Design Study, the district should involve the public during the collection of data, the development of alternatives, and following final recommendation and decisions. Depending upon the size of the project, only one activity may be necessary at each stage, or multiple activities may be necessary to adequately cover the study area. The project scope and the extent of public interest will determine the need for multiple meetings or other activities during a particular stage of the Study development and the frequency of public involvement. To comply with Section 128 of Title 23 of the US Code, a public hearing must be held or offered during the design phase if one was not held during the corridor phase if the project passes through or bypasses a city, town, or village. However, if sufficient need for a public hearing existed during the corridor stage, that same need will likely exist at the design stage and a second hearing will be required. If the project covers an extensive geographical area so that one hearing will not be convenient for all persons affected, more than one hearing will be required at the design stage.

19-3.01(b) Combined Corridor and Design Phases

Federal-aid projects which involve only a single, combined corridor and design phase may have a wide range in scope and may vary from minor safety improvements requiring no additional right-of-way (Project Report) to the reconstruction of an existing rural roadway or an existing urban street to meet full functional class standards (Combined Corridor and Design Study). For appropriate study types, see Chapter 11. When projects have a large scope and involve additional right-of-way throughout the project length, are known to be controversial, involve significant impacts, or are the subject of organized opposition, the district should conduct a public involvement program with more than the minimum number of activities, including a public hearing(s) or offering the opportunity for a hearing, if necessary, in accordance with Section 19-2.03.

If the project meets the criteria discussed in Sections 19-2.01, 19-2.02, or 19-2.03, the district must include the holding or offering of at least one public hearing in the program. On all other Combined Corridor and Design Study Federal-aid projects, several options for obtaining public involvement are available. On those projects that require no additional right-of-way, the District Engineer shall determine what information shall be released to the news media in the area to inform the public of the project. For those projects that involve additional right-of-way, the District Engineer will have the following options available:

1. Contacts with Individual Property Owners. This option is generally suitable when the project involves acquisition of minimal right-of-way from a small number of property owners (e.g., 10 or fewer). Under this option, the district will contact each property owner from which right-of-way will be acquired and provide them with an opportunity to comment on the project. A representative of the district can make a personal contact or the district may contact owners via certified mail with return receipt. Document personal contacts in a memorandum to the file. If certified mail is used, the letter should describe:

   - the reason for the contact,
   - policy on public involvement,
   - property affected,
   - scope of project,
   - reason for the ROW,
   - scheduling of the project,
   - how to comment,
   - options for commenting,
   - where to get more information, and
   - acquisition procedures.

   There should also be a signature blank for the owner. See Figure 19-3A for a sample letter. The district should send two copies of the letter (one original and one copy) by certified mail with return receipt requested, with an exhibit showing the property and the proposed taking, and a self-addressed stamped envelope for returning comments. Make a record of any comments from the property owner (whether contacted in person or by certified mail) and inform the owner of any actions taken to resolve any objections or suggested changes. When public involvement requirements are satisfied by this option, the District Engineer shall determine what information regarding the project should be released to the media.

2. Involvement Activity Open to the Public. This option is generally suitable when the project involves acquisition of more than minor amounts of right-of-way, involves the taking of improvements on affected properties, or involves known controversy, organized opposition, or potentially significant impacts. Under this option, the district will (a) schedule and hold an involvement activity open to the general public and advertised in advance, and/or (b) publish an official offering of a public hearing. At scheduled activities as in (a), a transcript will not be prepared; however, a district representative will record comments from those attending the meeting. If a public hearing offer is published as in (b), a public hearing will be held if sufficient interest is demonstrated. If sufficient interest is not demonstrated, each requester will be contacted, informed of the lack of interest, and offered an opportunity to comment. Make any comments received a part of the project record and include a response in the Report. The district should release information to the news media concerning design approval and contract award.

(UNDERLINED PORTIONS VARY WITH PROJECT)

Location Studies
Illinois Route 1
Illinois Route 2 to Illinois Route 3
Job No.: P-91-000-00
Some County

RE: Property Tax Number 12-34-567-890

Month 1, xxxx

Mr. John Doe
123 S. 4th Street
Some Town, IL 60000

Dear Sir:

Reason for Contact

The purpose of this letter is to notify you that the Illinois Department of Transportation is presently in the preliminary engineering phase of a study for the improvement of Illinois Route 1 from Illinois Route 2 to Illinois Route 3.

Scheduling

This project is one of the projects tentatively included in our Fiscal Year XXXX Program, subject to the availability of funds.

Policy

It is the policy of the Department of Transportation to provide all interested persons an opportunity to become acquainted with highway proposals of concern to them and to express their views at those stages of a proposed project when the flexibility to respond to those views still exists. When a proposed project would have major impacts on the surrounding areas, or where large amounts of right-of-way would be acquired, a public meeting or a public hearing will generally be held. When a project would not involve these conditions, our current practice is to contact each affected property owner directly.

Identify Property Affected

Based upon a review of the XXXX tax records of Some County, you are indicated to be the owner of the property located in the northeast corner of Illinois Route 1 and Illinois Route 2 as shown on the enclosed aerial photograph.

Describe Project

The proposed improvement generally consists of widening, resurfacing, rehabilitation, restoration, intersection channelization and traffic signal modernization. The intersection at Illinois Route 2 will be channelized to provide separate left-turn lanes and the traffic signal will be modernized. The roadway will be widened 4 ft (1.2 m) on both sides and curb and gutter provided. The proposed right-of-way that is to be acquired from your property for this improvement is indicated on the enclosed aerial preliminary plan sheet.

SAMPLE LETTER

Figure 19-3A

Reason for ROW — This right-of-way acquisition is needed to improve the corner turning radius at Illinois Route 2.

How to Comment — At the end of this letter is an area where you can indicate your comments, if any. You may also request further discussions with us, either via the telephone or in a personal meeting. Please indicate the appropriate response and return one copy to us in the enclosed, self-addressed stamped envelope. We would appreciate receiving any comments you may have by _____ *(date)* .

Acquisition Procedures — Upon completion of our study, a report will be prepared describing the proposed work and submitted to our Springfield office for approval. After approval is received, we will proceed with the plan preparation and land acquisition phase. In that phase, a representative of the Department will contact you regarding any necessary acquisition.

Please note that your response, or lack thereof, will in no way influence the amount of compensation you will receive for your property if acquired as part of the project.

How to Get More Information — If, after reviewing this letter, you have any questions or wish to arrange a meeting to discuss this improvement in more detail, please contact (Contact Person as assigned by District) at 312/884-4100.

Very truly yours,

District Engineer or District Program Development Engineer

Exhibit & Self-Addressed Stamped Envelope — Enclosure

Options for Commenting — Check the appropriate response:

_____ I have no comments at this time.

_____ I have noted my comments on the back of this page.

_____ I would like to discuss this further in a telephone conversation.

_____ I will call you.

_____ Please call me at _____ (Telephone Number)
(Indicate preferred day and time)
_____.

_____ I would like to have a personal meeting to discuss this project.
(Please call _(Contact Person)_ to arrange date, time and location.)

Signature Blank for Owner

_____ _____
Signature of Owner Date

SAMPLE LETTER
Figure 19-3A
(Continued)

3. Public Hearing or Public Hearing Offer. This option is appropriate when the District Engineer determines the project involves sufficient public interest or organized opposition to warrant a public hearing.

When a project involves the use of temporary easements, this should be considered minor rights-of-way for the purposes of deciding whether Option 1 or Option 2 described above is more suitable. This involvement should establish good public relations with property owners and provide them with an opportunity for project input that could reveal information resulting in a reconsideration of design features.

Where property owners are not readily available, such as when the property is the subject of a trust agreement, use the following process to attempt to notify the owner. Direct a written notice or personal visit to the trust officer, or manager of record, to request him/her to inform the actual owner of a possible need for his property. Attempt to ascertain the name and address of the owner or power of attorney for comments. Include a time limit of not less than 21 days for response in the request. If a response is not received in that time, assume the owner or legal representative is not available or interested in commenting on the project.

If a project does not require the acquisition of right-of-way, does not substantially change the layout or function of the facility or connecting roads or streets, does not have a significant adverse impact on abutting property, or does not otherwise have a significant social, economic, environmental or other effect, then a public hearing is not required and other formal public involvement activities may not be necessary. However, the district must release information to the media announcing the initiation of such a project and the letting of any contracts. As discussed in Section 19-2.07, where a group or series of such projects might be located within a community or limited geographic area, schedule a public involvement activity to address cumulative effects of the group or series as a whole.

19-3.01(c) Projects Not Involving Federal-Aid Funds

For projects not involving the use of Federal-aid funds, the District Engineer will generally follow the same public involvement process as that for projects using Federal-aid funds. When State-only funded projects are subject to restricted time constraints, the District Engineer may elect to implement the following procedures as appropriate:

1. Where no additional right-of-way will be acquired, make releases of information to one or more news media announcing the initiation of studies and/or plans and the awarding of contracts.

2. Where minor amounts of right-of-way will be acquired, contact all property owners from whom right-of-way will be acquired and provide an opportunity to comment on the improvement. A representative of the District Engineer will record and document these comments and address them in the Phase I report. In addition, release information to

one or more news media on the initiation of studies and/or plans and the award of contracts.

3. Where significant amounts of right-of-way will be acquired or the number of property owners is such as to preclude individual contacts, the District Engineer will hold an activity open to the general public and announced in advance (see Section 19-4.01). Record comments received from these public involvement activities and address them in the Phase I Report. In addition, release information to one or more news media on the initiation of studies and/or plans and the award of contracts.

19-3.02 Format Options

19-3.02(a) General

Public involvement activities may utilize a number of formats in providing information to the public and receiving public input. By varying the format, the public may be involved individually in an informal atmosphere, in mock studies where participants may develop tradeoffs between various impacts, in listening to formal presentations of information, and in making comments for the record at a public hearing. Some of the formats provide for more than one of these relationships. The district should select the format for an activity according to the situation. Many prefer an individual contact that will not require speaking before large groups. When there is organized opposition, a verbatim transcript may be necessary to accurately record comments received and information given. The following provides a description of several acceptable formats with some guidance on the appropriate selection.

19-3.02(b) Group Briefings

Informal meetings with special interest groups, service clubs, and neighborhood associations can be a very effective means of circulating factual information on a proposed project and gaining valuable input. Such meetings might be similar in format to those used during the data collection stage when members of the location team conduct interviews in the community to gain information on current planning of government and businesses and community values in sensitive social and environmental areas. These meetings generally begin with a brief presentation by a member of the location team giving the background and goals of the proposed project, a summary of the work and decisions made to date, and a brief synopsis of the proposed schedule for completing the improvement. After this presentation, the meetings should be "open" for a question-and-answer period. This type of interaction will often eliminate undesirable speculation, provide considerable insight into the concerns of the community and the types of issues that must be addressed to minimize opposition and controversy, and provide a forum for gaining community support. Because these types of meetings will generally be attended by a relatively small number (12 to 15 persons), a personal relationship can be established with those in attendance and the level of intimidation usually associated with larger groups will be eliminated.

The location team should react to or arrange for invitations from groups such as:

- service clubs (Kiwanis, Rotary, etc.);
- city councils;
- County Boards;
- Chambers of Commerce;
- homeowners associations;
- League of Women Voters;
- local and regional planning agencies;
- State officials in whose district the project is located;
- environmental organizations; and
- minority organizations.

Where there may not be an existing organized group, a neighborhood leader may need to be identified, or the district may arrange the meeting. For example, in neighborhoods without homeowners associations, a particular homeowner may agree to act as a leader and arrange for meetings and attendants to discuss the project with representatives of the Department. If this option is unavailable, the district may arrange a meeting in the neighborhood or community and invite homeowners, businessmen, community leaders, etc., in small groups at different times to discuss the project.

This format has been used very effectively to gather data and ascertain community attitudes and values towards transportation projects, acquisition of properties, rerouting of traffic, interruption of services during construction, preservation of archaeological and historic properties, and the extent of concern for certain types of environmental and social impacts. Where a certain interest group may be impacted more severely than others by a project, a special meeting at a mutually acceptable time and place may be effective in gaining its understanding of the complexities of the issues, ascertaining the nature of its resistance, and determining mitigation procedures which might resolve certain objections. Meetings of this type tend to diffuse organized opposition, especially when the opposition is based on non-factual data.

The Open Meetings Act (5 ILCS 120/1 et seq) provides that a "meeting" of a "public body," as defined in the Act, must be open to the public unless it is covered by exceptions detailed in the Act. The Open Meetings Act also stipulates public notice requirements for meetings of a "public body." If a group or organization invites district staff to attend a meeting to make a presentation or participate in discussions, the district is not subject to compliance with the Open Meetings Act for its involvement in the meeting. However, if the district initiates arrangements for meeting with a specific group(s) to discuss project issues, it may need to provide notice of the meeting in accordance with the Open Meetings Act. Districts should contact the Office of IDOT Chief Counsel for guidance when questions arise on applicability of the Open Meetings Act to specific situations. If the district makes staff available for presentations to some groups or organizations, it should be prepared to accept invitations from other groups or organizations if they desire a similar opportunity.

As a part of the group briefing format, use small displays and/or handouts to supplement the presentation. Displays must be relatively small and portable because they may be used in facilities with limited space. Handouts containing basic project information will be useful for orientation and for future reference by attendees.

19-3.02(c) Open House

An open house offers the public an opportunity to meet with representatives of the district at a time and place that is reasonably convenient to discuss a proposed project. An open house may use any space that is readily available to the public and in the immediate area of the proposed improvement. Throughout the open house session, appropriate members of the district staff will be available to discuss the project with the public and answer questions.

An open house has a number of advantages in specific cases:

- It provides an informal setting that allows for responding to individual questions that may not be of general interest.

- It is responsive to the public at the grass roots level and does not depend upon assessments of public opinion by elected officials or other recognized leaders.

- Due to the hours of operation, an open house is available at convenient times for those who are interested.

- The absence of possible pressure or intimidation from groups or neighbors tends to motivate individual participation.

- An open house is effective for obtaining information where there are no established leaders or officials in the affected neighborhood or community.

An open house can make use of a wider range of public meeting facilities than those activities that involve larger groups. It can take advantage of a conference room in a courthouse or other government buildings or the mall area of a shopping center. Where there are available storefront buildings in commercial areas or shopping centers, the district can make arrangements to utilize these facilities for a short duration. School facilities might also be used, particularly on weekends. For increased mobility and flexibility, a van or trailer placed in one or more locations near the project may also serve as an excellent facility for an open house.

Districts should schedule the hours of operation for an open house to allow convenient access by interested parties. In some cases, a time period covering the afternoon and early evening (e.g., from 1:00 PM to 6:00 PM) may be sufficient and, in others, a longer period (e.g., from 10:00 AM to 10:00 PM) may be appropriate. If a heavy turnout is expected, it may be appropriate to schedule the open house for more than one day or even at several different

locations. It might also be appropriate to schedule and announce that certain Department experts will be available for questions at specific periods. Shorter time periods may be appropriate for smaller, non-controversial projects; however, at least a part of a shorter schedule should cover a non-working time period (i.e., after 5:00 PM).

Prepare displays and handouts for use during an open house. Displays in general do not need to be large because they normally will be viewed from relative short distances. Plan and profile sheets and aerial photography with superimposed design and location features are suitable for open house displays. Because presentations are not normally made, handouts may include a brief status report on the project and a tentative schedule for further involvement activities and completion of the project. Handouts are effective and allow individuals to later reaffirm the information gained.

An open house is generally accompanied by notices published in the paper and releases of information to the other media announcing the opportunity to discuss the project with Department personnel, to ask questions, and to submit comments. The notice should specify the time and place of the open house and all open houses if there will be more than one. If certain Department experts will be available only at limited times, the notice should specify that information. Publish notices in accordance with Section 19-4.

19-3.02(d) Workshops

Workshops are meetings where participants are given basic transportation requirements, economic and design constraints, and anticipated social, economic, and environmental impacts all related to a proposed project or project problem, and are then asked to study the problem and suggest a solution. In a workshop format, participants are requested to analyze the provided information, identify impacts that may have been overlooked, work with others with whom they may agree or disagree, and offer solutions and explanations on their suggestions.

Workshops provide an opportunity for the public to experience the complexities and problems that confront Department personnel during project development. As such, this enhances public understanding and appreciation of the Department effort. Because the public will be analyzing pertinent information and suggesting solutions to problems and indicating preferences among impacts and tradeoffs, a sense of existing local values and preferred mitigation measures can be gained.

When workshops are announced in the news media, the announcements must clearly explain that those attending the meeting will be expected to participate in study groups. The announcement should also explain that formal comments or testimony will not be taken, but that other opportunities will be offered for that purpose. At the beginning of the meeting, the same information must again be clearly explained to those present.

Although not always controllable, workshop formats are generally more effective if the participants are limited to a number which can be divided into smaller groups of from four to eight per group, and the number of groups are consistent with available space and manpower.

Because those attending workshops will be expected to participate for 2½ – 3 hours, they must be scheduled at a time when attendants will have the time available. Weekday evenings or daytimes during weekends are most effective. Workshop meeting places should have tables and chairs, good lighting, and other facilities appropriate for the work groups. School cafeterias usually offer excellent facilities for workshops.

At the beginning of a workshop, the moderator should explain the goals and objectives of the session. If other activities have been scheduled subsequent to the workshop, those should also be announced so the participants will be aware of subsequent opportunities to comment on the project. The moderator should explain the project background for the workshop. This includes an explanation of the project need, the basic constraints under which the project will be designed (economics and design criteria), the impacts that have been recognized to date, and any other information that may be pertinent to the scope of the workshop. This presentation must be concise because most of the available time should be allotted to problem solving and solution development. The opening presentation should generally be 30 minutes or less. Divide the participants into groups of four to eight people. Provide each group with the data and exhibits needed for its work, and assign each group a resource person or group leader to answer questions and provide general guidance to the group. The leader may also exercise informal group control, act as group recorder, and report group conclusions. Each group will be expected to provide a recommendation and an explanation.

Workshops should be announced in accordance with Section 19-4.

For workshops or other public involvement activities involving the formation of small working groups, certain practices can be applied to optimize the effectiveness of the working group process:

1. When explaining the purpose and role of the working group, emphasize that the group should function as a "horizontal" organization (i.e., members of equal standing) rather than a hierarchical organization. A horizontal organization will enhance the productivity, creativity, participation, and commitment among the group members.

2. The group must recognize and understand that, to be effective, it must have a common focus and agreement on *what* will be discussed and *how* the discussion will progress. Designation of a group facilitator is key to accomplishing this objective. (Facilitators may be paid personnel hired by the Department or the project consultant.) The facilitator will serve as a neutral agent in the process who will function to keep the participants focused and on track in working toward agreement on specific issues (rather than allowing the group participants to attempt to address multiple issues simultaneously). He/she will direct the flow of discussion to promote open and balanced participation and will protect

individuals and their ideas from personal attacks that can stifle participation. At the outset of the group's formation, the roles and responsibilities of the facilitator and group members must be made clear so all understand how the group will function.

3. Designate a recorder for the group. Like the facilitator, the recorder will act as a neutral agent and will not judge the comments or suggestions offered by group members. The recorder will write down the main points and ideas expressed by the group in a format that can be viewed by all group members as discussions proceed (e.g., large sheets of paper on which the ideas and comments can be written with felt-tip markers). The recording of discussion points in full view of the group serves to focus attention and ensures complete and accurate documentation of the ideas and comments expressed. This "group memory" is important both for the efficiency of group meetings (e.g., it eliminates the need for group members to be preoccupied with the process of recording) and for reporting on the actions of the group.

4. The seating arrangement can affect small work group functioning. The recommended arrangement has the group members seated in a semicircle facing the facilitator and recorder. This helps to focus the attention of the group on the facilitator and the written record of comments and ideas. It also avoids placing any of the group members in perceived positions of authority (e.g., at the head of a table) relative to other members.

19-3.02(e) Informational Meetings

Informational meetings are informal public gatherings that blend the individual discussions of open houses with the group interaction of public hearings. They include an informal, individual discussion period characteristic of an open house, a formalized presentation, a group question-and-answer period and, if questions still remain, another informal discussion period. Generally, a transcript of the meeting is not recorded, but notes of the comments and questions are made.

Informational meetings provide an opportunity to assemble a large group at one time to discuss the status of the project, the decisions made to date, the options yet to be decided, and the criteria considered critical for the remaining decisions. Informational meetings involve only the limited time commitment of a single evening; however, they approximate the informality and personal communication traits of all-day open houses. The limited time commitment may, however, result in some members of the public being reluctant to make comments due to the presence of other members of the community.

In preparing for an informational meeting, the district should make arrangements for a meeting room with sufficient space for the anticipated audience size. Staff all unlocked entrances so handouts can be distributed and an attendance sheet signed for records and future contacts. If large, the room may require amplified speaking equipment for satisfactory acoustics. The room should also contain space for discussion centers.

The presentation should explain the format of the meeting and introduce experts available for questions in specific areas. When relocations are necessary, Land Acquisition representatives should always be available to discuss relocation assistance and property acquisition procedures. The discussion of the project itself should include:

- the reason for project initiation;
- the constraints in the area of economics and design limitations;
- the advantages and impacts of each alternative, including environmental impacts;
- any decision or conclusions reached, remaining decisions, and options to be made by technical staff;
- a tentative schedule for project completion; and
- an explanation of the information or input expected from the public as a result of this meeting.

Although there are no required legal statements, one of the discussion centers should address land acquisition.

The presentation may use displays, slides, or other visuals, or it may use a coordinated slide-tape or videotape program. The presentation should not generally exceed 30 minutes but in no case should the presentation exceed 45 minutes. (See Section 19-5.03 for additional information.)

If the displays will be used during the presentation, they should be visible from all positions in the room. If slides are used, the screen should be sufficiently large, and it should be positioned for good visibility. Videotape presentations may require multiple monitors for proper visibility. Handouts are effective and, if they contain maps or drawings, may be used during individual discussions. If duplicates of major displays and slides (such as alternative alignments or typical sections) are contained in handouts, attendees can make notes during the presentation and use them for future reference. Supply the discussion centers with suitable drawings and exhibits to reduce dependence on those used for the presentation. Each discussion group should have a resource person to answer questions and provide information, and a recorder should be available to note the questions and comments received. These notes will be used later to analyze the results of the meeting.

Generally, the announcements and notices for an informational meeting will be in accordance with Section 19-4.

19-3.02(f) Information Exchange (Citizen Working Groups/Advisory Committee)

For complex projects, districts may consider establishing an "Information Exchange" to assist in identifying and focusing concerns and comments from a diverse array of interests. The Information Exchange involves the formation of Citizen Working Groups to analyze and react to project alternatives, impacts, and other project-related issues and an Advisory Committee to serve as the focal point for receiving comments and recommendations from the Working Groups and passing them to decision-makers.

In using this approach, the district must make clear, through formal Constitutions and Bylaws, that the Working Groups and Advisory Committee are not intended to make any final project decisions. Rather, they will provide a forum for discussion and comment on various project-related issues to assist the Department and other decision-makers. The following discussion presents an overview of the key elements of the Information Exchange process:

1. Working Groups

In the Information Exchange process, Working Groups form the key mechanism for eliciting discussion and comment on the proposed project. These Groups are formed on the basis of common interests (e.g., public officials, public interests, agricultural interests, development interests) and have the following primary objectives:

- Evaluating alternatives presented by the Department and discussing and commenting on impacts, analysis factors, and evaluation methods.

- Assessing the relative merits of the alternatives, identifying advantages and disadvantages of the alternatives, and suggesting ways to make the alternatives more acceptable.

- Informing the Advisory Committee of the Groups' evaluations, assessments, concerns, and suggestions.

The issues and interests on a specific project will affect the nature and number of Working Groups that may be appropriate. As the initial step in establishing Working Groups, organizations and other interests likely to see themselves as potentially affected by the project should be identified and contacted to determine their interest in participating. The district may solicit interest through any of the various methods used for public involvement. For public officials or organizations representing specific interests, letters of invitation to those entities may be appropriate. For the public at-large, informational meetings (or some form of public notice) may be a more effective method of alerting potentially affected parties and determining interest.

The notification should include the name and address of the contact person to whom responses will be directed and should also explain the purpose of establishing the Working Group(s) and how they will function as a part of the Information Exchange. The notice should indicate that,

after obtaining an indication of the level of interest, an organizational meeting will be scheduled to provide more detail on the Information Exchange process and to formalize the working groups.

At the organizational meeting for the Working Groups, the Information Exchange process and the objectives of the Working Groups and Advisory Committee can be further explained. In addition, the district can determine the membership in each Working Group, present and adopt Constitutions and Bylaws, and initiate selection of a Group chairperson and vice chairperson to represent the group on the Advisory Committee. Following the initial organizational meeting, the adoption of Constitutions and Bylaws, and the designation of chairpersons, the Working Groups can proceed with their activities and exchange information concerning Working Group and Advisory Committee meetings, project details and schedules, etc., through their representation on the Advisory Committee.

2. Advisory Committee

The Advisory Committee will include two representatives from each of the Working Groups (the chairperson and vice chairperson of each Group), the Department of Transportation, the Federal Highway Administration, and the project consultant, as appropriate. The functions of the Advisory Committee include integrating the interests and values of the Working Groups into the planning process, advancing the objectives of the Information Exchange, and managing the overall process. The objectives of the Advisory Committee include the following:

- Providing policy direction for the Information Exchange.
- Evaluating alternatives for the project based on information provided by, but not limited to, public meetings/hearings; deliberations of Working Groups; consultant reports, as appropriate; and FHWA and DOT inputs.
- Recommending alternatives for the project.
- Preparing a formal report to the Secretary of IDOT detailing the work of the Committee and including its recommendations and conclusions.

Tasks performed by the Advisory Committee in accomplishing its objectives will include actions such as:

- Evaluating the need for the project.
- Evaluating the social, economic, and environmental impacts of project alternatives.
- Serving as a communication link to the Working Groups and bringing their concerns to the decision-makers (i.e., IDOT, FHWA, and public officials).

- Helping to resolve conflicts among various interests.
- Reviewing and making recommendations on the decision-making process.
- Assisting in educating the public about the proposed action and the decision-making process.

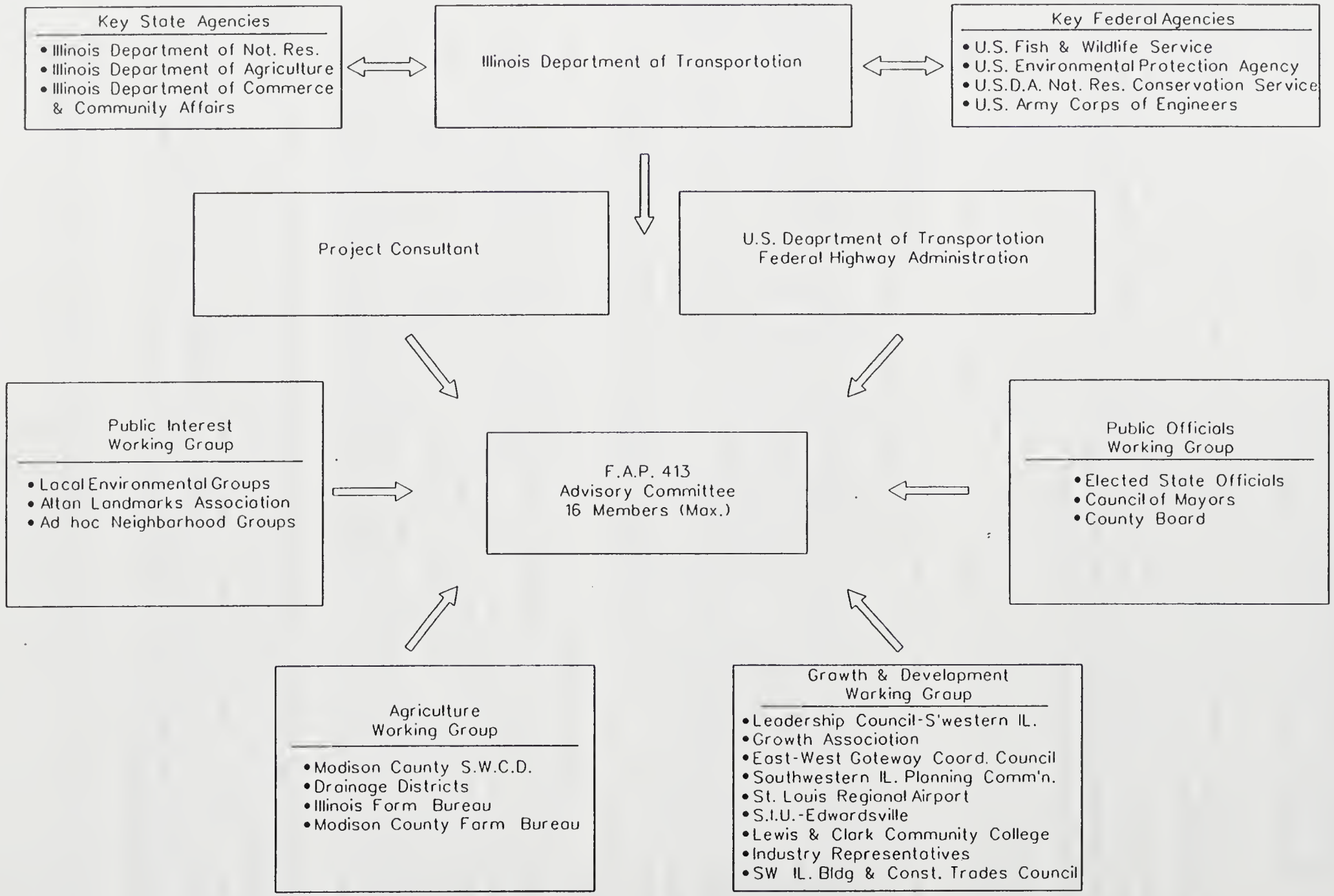
Figure 19-3B illustrates an example structure for the Information Exchange process. BDE can provide interested districts more detailed information upon request on implementation of the Information Exchange concept on IDOT projects.

19-3.02(g) Formal Public Hearings

Formal public hearings are proceedings conducted by appropriate officials of the Illinois Department of Transportation in the more traditional public hearing format to inform the public of proposed projects or programs, to explain the options under consideration, and to receive and document public reaction. This format generally has a speaker(s) addressing a large audience. Members of the audience in turn have an opportunity to address the speaker(s). Because of the size of the audience, the program must be structured allowing for very little informal exchange of information (see Figure 19-3C). The US Code requires that, if a public hearing is held, a transcript of the proceedings must be recorded. This transcript can be advantageous because it eliminates conjecture and interpretation. Recording the proceedings may be by court reporter or electronic means. A variety of governmental agencies have extensively used the formal public hearing format, and the public is generally familiar with the process and the role expected of them.

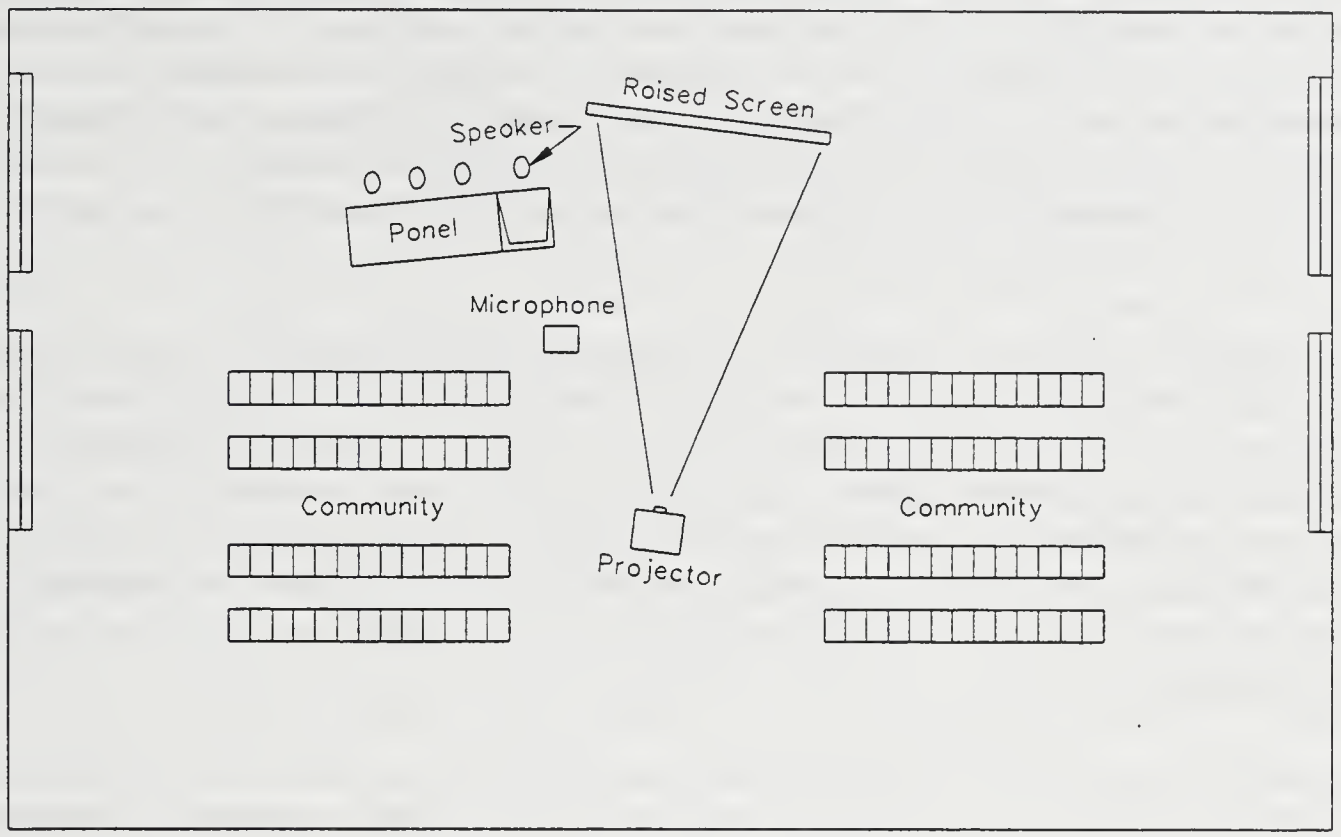
Formal public hearings can discourage participation by certain persons or groups that are intimidated by the formality and size and/or make-up of the audience. Conversely, formal public hearings may attract individuals that are seeking a forum, which often includes press coverage, to present their views on transportation matters and a variety of other topics. As such, the moderator may need to caution attendants occasionally to restrict their comments and statements to the project and may need to suggest a time limit for each commenter (e.g., 5 minutes) to discourage individuals from attempting to monopolize the comment period.

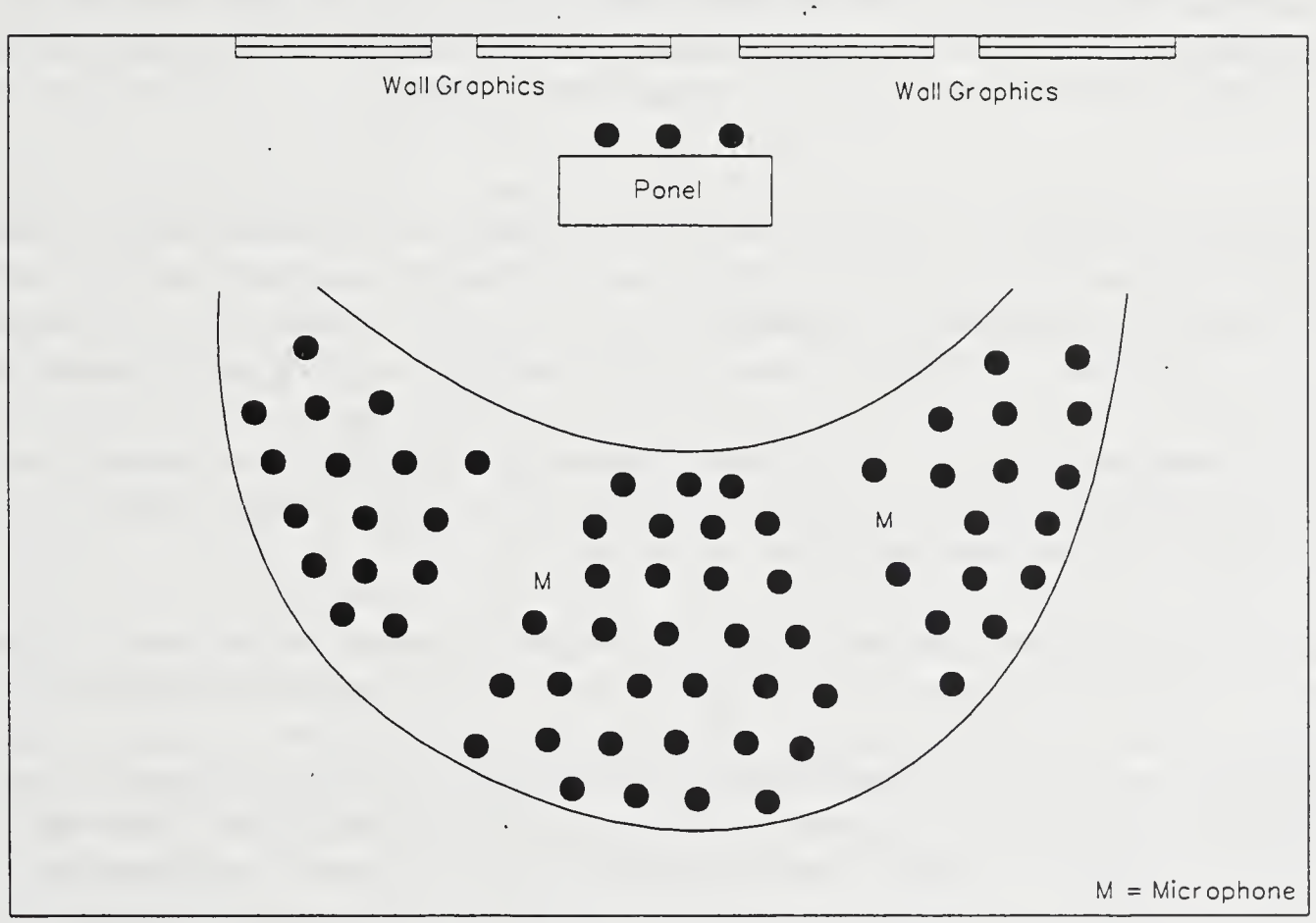
Formal public hearings generally require considerable time for preparation of displays and presentations. This often results in costs greater than those for other public involvement activities. When a hearing is held to comply with Federal requirements, the expenses are necessary to ensure that the project will qualify for Federal-aid. Otherwise, the need for a public hearing should be determined considering project impacts, project controversy, available lead time, and cost effectiveness.



EXAMPLE OF INFORMATION EXCHANGE PROCESS

Figure 19-3B





FORMAL PUBLIC HEARING FORMAT

Figure 19-3C

Public hearings often involve a larger gathering than other public involvement activities. To ensure the availability of a facility of adequate size and equipment in a suitable location, public hearings should be scheduled well in advance. Occasionally, the availability of a desired facility may influence the scheduling of a hearing. If a single public hearing is proposed, generally, it should be in the evening when the majority of the public is available. If a series of public hearings is proposed, then hearings may be held at various times during the day and at various locations throughout the project area.

The presentation opening the formal public hearing should normally not exceed 30 minutes and in no case should it exceed 45 minutes. The district staff should carefully develop the discussion and only address important points (see Section 19-5.03(b)) because time is limited. Type and follow the text carefully, so the time limit is not exceeded and to ensure that the required statements are included. The presentation may use a variety of formats including live talks, live talks with exhibits, videotape or slide-tape combinations, or segments involving a variety of presentations. See Section 19-5 for further information on the development of presentations.

Considering the size of the meeting room(s) and the audience to be accommodated, the district staff should size and position displays for good visibility throughout the room. If slides are used, the screen should be sufficiently large so that the printing on the slides is legible from the back of the room. Handouts are considered an effective tool for distributing information to the public. To coordinate information presented at the public hearing with handouts, exhibits in the handouts should be similar to those displayed at the hearing.

When an exceptionally large attendance is expected, it may be desirable to conduct several activities concurrently. If separate rooms are available at the hearing facility, a special room may be used for receiving testimony from persons having prepared statements for the record and who are not interested in attending the entire hearing. After the presentation is complete, comments can be recorded in the main hearing room also making two recorders available for statements. If such a process is used, it should be announced both prior to and at the public hearing. Indicate that both recordings will become an official part of the record. Although some duplication of comments may occur, the shortening of the time involved at the public hearing may make the duplication acceptable.

Many of the comments expressed at public hearings concern right-of-way acquisition. The district may address these concerns by establishing a separate room or discussion center staffed with Land Acquisition personnel to dispense general information and to discuss property acquisition procedures, relocation assistance programs, and effects on individual properties. By satisfying property-related questions prior to or during the presentation, this may minimize the number of questions asked during the public hearing. Because Land Acquisition personnel should generally be available throughout the hearing, the separate, integrated use of such personnel is both effective and efficient.

Announcements and notices for a formal public hearing should be according to Section 19-4.

19-3.02(h) Open House Public Hearings

The open house public hearing format is an alternative to the formal public hearing format and may be used wherever a public hearing is required or appropriate. It remains necessary, however, to have appropriate Department representatives present, to provide explanatory project information, to provide for the receipt of oral and written statements, and to prepare a transcript of the proceedings. The open house public hearing format provides for a continuous flow of visitors over a period of hours in contrast to a formal public hearing that attracts a large crowd at a fixed time. The smaller number of visitors present at any given time at an open house public hearing allows personalized service through staff discussions with individuals. Most of the advantages described in Section 19-3.02(c) for open houses are also applicable to open house public hearings. Surveys of participants in public activities for IDOT highway projects have indicated that the open house public hearing format is generally viewed more favorably than the more formal, traditional format. The open house hearing format is less intimidating to participants and offers a more workable option for conducting hearings for very large audiences. FHWA has recognized the benefits of this format and encourages its use as an effective public involvement method that meets the hearing requirements of the US Code.

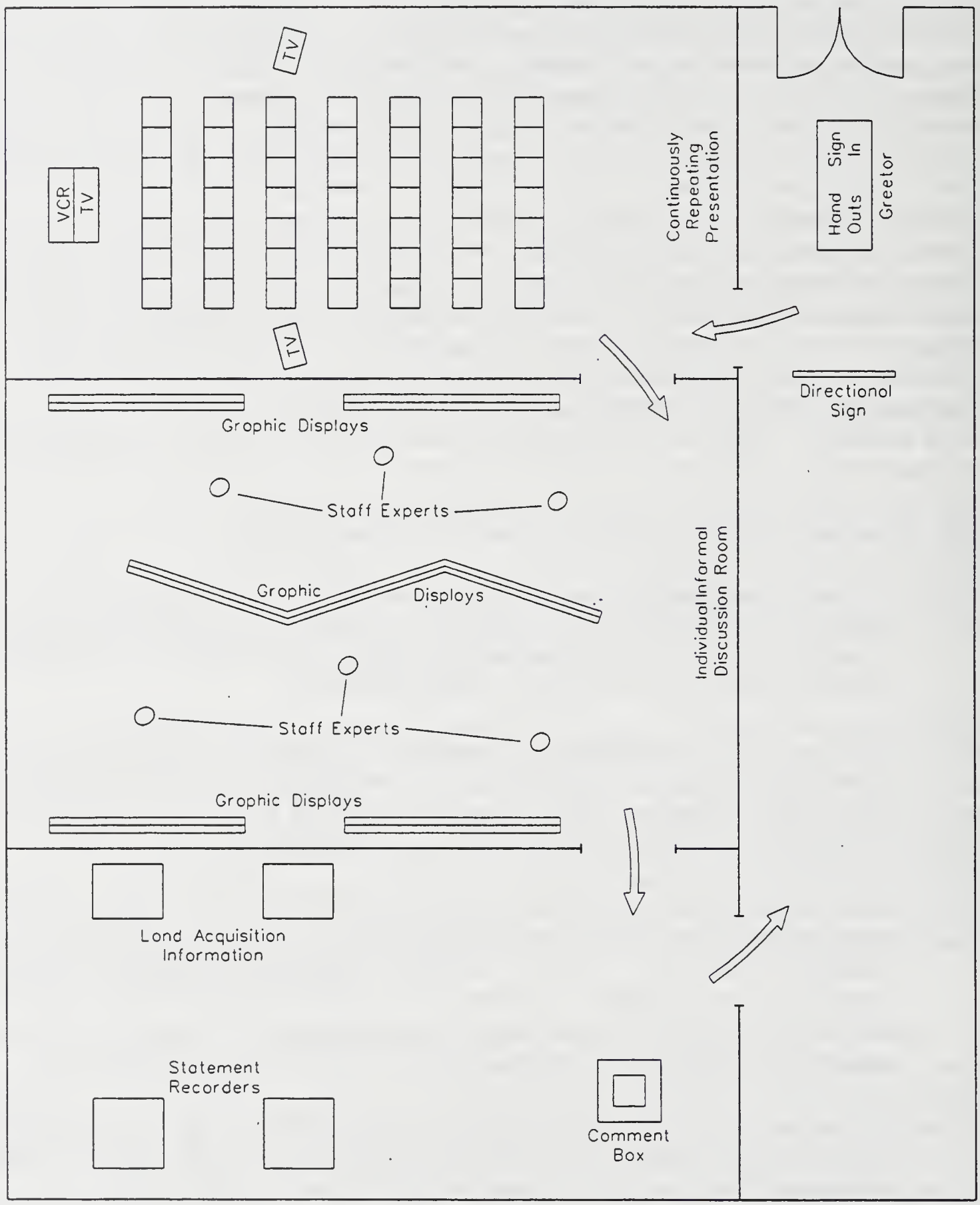
Open house public hearings generally involve four separate activities:

1. The first is the greeting station. Here, staff members greet the public, advise them about hearing procedures, distribute handouts, obtain names and addresses, and note the opportunity to submit oral and written statements. The handout may include forms for submitting written comments during or after the meeting.

2. Next, the visitors are directed to a presentation of general information about the project to orient them on the purpose of the project, alternatives under consideration, and the major project features. This is best accomplished by electronic means such as slide/tape or videotape presentations that can be repeated without variance.

3. After receiving a general orientation, the district staff directs the visitors to an area with graphic displays and staff experts for small group or individual discussions on specific questions or concerns. A variety of disciplines should be represented so virtually any question can be addressed. Members of the public are free to remain in this area as long as necessary to obtain the information they desire. Staff members should remind visitors of the opportunity to submit comments at the conclusion of discussions.

4. The final activity is an opportunity to give oral comments to recorders or prepare and submit written comments. After completing their comments, visitors are free to leave. A typical setup for an open house public hearing is shown in Figure 19-3D.



OPEN HOUSE PUBLIC HEARING FORMAT
Figure 19-3D

Open house public hearings generally require considerable time for preparation of displays and electronic presentations. The need for slides and/or videotapes and the possible need for outside media services for the development of electronic presentations may require additional lead time. The displays for the individual discussions do not necessarily need to be large because they will generally be viewed from relatively short distances. The hearing may include aerial photography with superimposed design and location features, but preliminary plan and profile sheets may also be suitable. Where visual impacts are a major concern, the district may wish to also provide exhibits produced through video imaging, computer imaging, or photomontage, which depict how alternatives will look in the project setting.

The district should investigate and reserve meeting facilities early to ensure the availability of a suitable room arrangement. Open house public hearing formats need a controlled entrance so that greeters can effectively guide attendees. A separate room is desirable for the orientation presentation so the sound does not interfere with the individual discussions. If a separate room is not available, screening is helpful. Preferably, the orientation room will be near the entrance and before the discussion area to encourage a natural flow in the proper sequence. In the discussion area, staff members should be clearly identified and should initiate discussions with attendees. The district may wish to identify and staff a fixed location for providing special expertise on matters such as land acquisition. If space is available, locate recorders for oral statements in a separate room or screened area to reduce interference from the other activities.

Announcements and notices for open house public hearings should be according to Section 19-4. Because the general public may not be familiar with the open house format, certain features should be described in the notice. The notice should specifically state the open house format will be used and all information and presentations will be available throughout the time period specified.

19-3.02(i) Non-Meeting Activities

Preceding subjects have addressed various public involvement activity formats that require interaction or meetings between district personnel and the public. This discussion will address those activities that do not require such actions. Non-meeting activities are not intended to replace meeting-type activities but are intended to supplement or bring attention to other meeting-type involvement activities. This *Manual* presents only a general discussion; detailed procedures may be obtained from other sources:

1. Opinion Polls. Opinion polls contact people in their homes or places of business and request information from them on specific topics. The polls may consist of mailing a questionnaire, telephone contacts, or personal interviews. They may seek out or address specific groups such as those living in a specific geographic area, those who work in a specific area, or those who belong to certain organizations. Mail-type polls may result in a response as high as 65%-80% with proper administration; however, such polls rely on the public's initiative to complete a questionnaire, their interpretations of the

questions, and their ability to express their own views. Contacts such as those made by telephone or personal interview result in a greater response and information that is more valuable and usable. Telephone polls are more expensive than mail, and personal interviews are more expensive than telephone polls. Contact BDE for more information on the use and administration of polls.

2. Newsletters. For major projects or programs of projects, it may be appropriate to prepare a periodic newsletter to inform the public of the progress of the project or program. Newsletters can be distributed to all residents in a given geographical area so they have the opportunity to be aware of the project. A newsletter can also stipulate the name and address of persons to contact for additional information. If a separate newsletter is not practical, place articles in the newsletters of other organizations and agencies. BDE has on file newsletters that have been prepared for various IDOT highway projects. Districts interested in obtaining copies should contact BDE.

3. Brochures and Handouts. Information printed as brochures or pamphlets can be distributed widely throughout a community affected by a proposed project. These publications may be used to distribute information or bring attention to other public involvement activities that may have public interest. The brochures may include opinion polls or questionnaires to be returned to the district office. Brochures and handouts may be distributed in public places, such as stores, public buildings, and civic centers, or throughout specific work areas or neighborhoods. They may be directed toward specific groups such as those using bus stations, parking lots, or shopping centers.

4. Television and Radio Appearances. Many urban areas have radio or television stations that offer public service announcements or public interest programs as part of their regular programming. Where this service is available and desired, appearances on these shows can be an extremely effective forum for discussing a proposed project in the area served by the stations. Discussions on the show may serve as a vehicle for dissemination of information or as an interest builder for future involvement activities in the area.

5. Cable T.V. Cable T.V. companies normally set aside one channel for public service. The availability of using this service may vary among companies. Options may range from entering an announcement on public hearing activities to the presentation of a film or tape on the proposed project. Reruns of public hearing presentations may also be offered on such channels in some locations.

6. Toll-Free Telephone. This activity may be used in conjunction with any or all of the other activities. Announcements to the public for upcoming involvement activities may include a statement concerning the availability of a toll-free telephone number to call. Personnel staffing the toll-free number should be generally familiar with the project. If a question is raised which cannot be answered immediately, make provisions for return calls with answers.

7. Signs and Billboards. Signs can be placed on project right-of-way announcing scheduled public involvement activities. It is one means of notifying highway users who are not from the immediate area. Exercise care to avoid unnecessary visual clutter and to ensure removal immediately following completion of the activity. Signs may be more effective in rural areas due to reduced competition from other signs.

8. IDOT Internet Site. Districts may wish to include project-related announcements on the IDOT Internet Site. Procedures for including district information on the web site are available on the IDOT Intranet at http://idotweb/resources.asp.

19-3.02(j) Combining Activities

The preceding subjects have discussed the use of various public involvement formats as a single activity. By combining certain activities, the individual advantages may be compounded for maximum benefit. This discussion will offer suggestions for maximizing the effectiveness of involvement activities by combining different formats. The suggestions are not intended to be exclusive but rather to serve as examples and stimulate ideas. Other potentially effective combinations may be incorporated into public involvement programs:

1. Open House with Periodic Presentations. The format of an open house inherently requires repetition of information to satisfy basic inquiries on the project. Announcements of an open house may include a statement that a brief presentation of general information will be made at periodic intervals such as on the hour or the half-hour. These presentations should not be longer than 5 or 10 minutes. An effective option is to tape this presentation or use a repeating videotape or movie.

   Presentations may be limited to coverage of specific topics such as right-of-way acquisition or environmental impacts. Appropriate district staff must be present to discuss the topic in depth. Individuals interested in more detail on specific topics can then attend at specific times. Notices of the open house should specify topics and times.

2. Recording Comments at Activities Which Are Not Public Hearings. It may be advantageous to provide a verbatim record of some or all input at public involvement activities for subsequent reference to questions raised, information disseminated, or comments received. This process will also ensure those making statements that their comments will be recorded as given. Verbatim recordings may intimidate some persons that might wish to provide comments. The district staff may provide an alternative means of documenting comments in addition to the verbatim recordings to accommodate these individuals.

3. Spontaneous Workshops. When open houses, group presentations, or informational meetings are scheduled, certain attendees or groups may wish to engage in some form of problem-solving activity. If space, appropriate materials, and expertise for resource

leaders are available, a spontaneous workshop may be initiated. Make a record of findings and conclusions for further evaluation. The district staff can serve as a resource and discussion leader and record the comments and proposals that are made for future use by the location team.

4. Formal Public Hearing with Informal Sessions. In conjunction with scheduling a formal public hearing, the notice may state that district staff will be available for a period of time before and after the formal hearing to answer individual questions and discuss the proposed project. In this manner, individual questions that may be raised during the hearing and placed on the record can be answered individually, thereby shortening the length of the hearing and the transcript. Also, the advantages of offering an informal, personal contact activity with a formal public hearing format can be combined into a single session.

5. Combination of Meeting and Non-Meeting Activities. Meeting-type activities can use public gatherings advantageously by distributing questionnaires in addition to or as part of the regular handout. Questionnaires distributed at public meetings can be explained to recipients and usually have a higher percentage of return than those received through the mail. The information obtained at the meeting should simplify completion and serve as a stimulus for follow-through.

   Including in the handout a form for submitting comments can encourage written comments. The form should have appropriate data for identifying the project, space for comments, and blanks for the name and address of the person submitting the comments. The District Engineer's name and address should be printed on the back. Include instructions for folding the sheet into thirds, taping it shut, and mailing. Department experience has demonstrated that this format is very effective.

6. Radio and TV Opinion Polls. Use of radio and TV to conduct opinion polls through hot-line telephones often is an excellent means of generating interest, increasing attendance at public involvement activities, and obtaining useful information.

19-3.03 Locating Involvement Activities

A critical aspect of designing a public involvement program is the selection of appropriate locations and facilities for accommodating the involvement activities. The district staff should consider several criteria in the location and selection of facilities for involvement activities; however, the standards vary for different activity formats. These criteria are:

- size,
- availability of equipment,
- location,
- accessibility to aged and persons with a disability,

- comfort,
- availability,
- cost, and
- acceptability to all segments of the public.

Two of these criteria must be met for all involvement activities regardless of format — availability and accessibility to the aged and persons with a disability. The standards for the remaining criteria vary according to the size and duration of individual activities and the makeup of the entire involvement program. For example, open houses do not normally require a large meeting room, nor do they require surroundings that are especially comfortable because the attendance period is relatively short. Acceptability to ethnic groups is not critical for a given activity if the involvement program, as a whole, provides an equal opportunity for input through activities in other locations. Succeeding subjects will address the application of the criteria to specific formats.

Executive Order #5 (1979) requires that meetings or conferences be held in a public or private place that is accessible to persons with a disability in a manner consistent with the Accessibility Standards prepared by the Capital Development Board (CDB). Inspect potential sites to determine if they meet CDB standards. A site evaluation form is available from the Department of Human Services to aid in the inspection. A site that fully complies must be used unless there are compelling reasons to the contrary, such as inadequate capacity, ethnic objections, and/or unacceptable geographic location. If a fully accessible site that meets other mandatory criteria is not available, one which meets the other mandatory criteria and which most nearly complies with the Accessibility Standards should be used. Factors such as comfort, minimum cost, and availability of audio-visual aids or equipment may be compromised when persons with a disability are expected to attend and fully accessible sites with such features are not available. Information on potential meeting sites in specific geographic areas is available from the Department of Human Services field offices.

19-3.03(a) Number of Locations

The district will select the number of locations based on the geographic area affected by the project, the availability of adequate transportation for those affected, and reasonable travel distances for the public expected to attend the involvement activities. In rural areas, it is adequate to hold a public hearing or other public involvement activity in each county traversed by the project.

In urban areas, the determination of needs is more difficult. In low-income neighborhoods, many persons depend upon public transportation. Accordingly, it may be a burden for these individuals to attend involvement activities outside of their immediate neighborhood. Residents of racial minority or ethnic neighborhoods may be reluctant to travel outside their neighborhood, especially to another racial or ethnic neighborhood. Where minority or ethnic neighborhoods are of considerable size, it may be appropriate to hold individual involvement activities in each

affected neighborhood. Where neighborhoods are relatively small and without apparent mobility problems, it is usually appropriate to hold one involvement activity for multiple neighborhoods.

Before confirming facility locations for public involvement activities, the following three questions should be satisfied:

1. During their normal activities, do residents of the area affected by the project normally travel the distances that will be required to attend the public involvement activity?

2. Is transportation available to those interested for travel to the facility during the time the involvement activity is scheduled?

3. Are there any social impediments that could affect travel to the area or neighborhood scheduled for the involvement activity?

19-3.03(b) Selection of Facilities

Other criteria that should be considered when selecting a facility for a public involvement activity are listed below. Most are self-explanatory; however, the discussion of individual formats in Section 19-3.02 offers some insight into the application of these criteria:

- size and capacity,
- equipment,
- comfort,
- cost,
- accessibility, and
- parking.

19-3.03(c) Examples of Suitable Locations

Presentations for Groups:

- organization's regular meeting place,
- community center,
- schools,
- restaurant,
- motel or hotel meeting rooms,
- private company meeting rooms or offices,
- individual's home, and
- district office.

Open House:

- van,
- trailer,
- storefront building,
- courthouse rotunda,
- central area of shopping mall,
- civic center,
- Chamber of Commerce meeting room,
- City Council chambers,
- judicial courtroom, and
- district office.

Workshops:

- school cafeteria or classroom,
- hotel or motel meeting rooms,
- restaurant (during off-peak hours),
- civic center, and
- service club meeting hall.

Informal Meetings and Public Hearings:

- schools (gymnasium, auditorium, cafeteria, or classroom);
- civic center;
- City Council chambers;
- judicial courtroom;
- service club or other social club meeting hall; and
- any meeting hall generally used by the public.

19-3.04 Examples of Suitable Involvement Programs for Project Types

1. Resurfacing:

   - news releases announcing inclusion in program and award of contracts.

2. Widening and Resurfacing:

   Conditions:

- rural or urban currently carrying State route marking,
- some minor additional right-of-way required, and
- no public hearing or offer required.

Program:

- open house or informational meeting when feasible alternatives determined, and
- news releases announcing inclusion in annual program and award of contract.

3. 3R Project on State Route or Major Bridge Replacement in Rural Area:

Conditions:

- generally follows existing alignment with limited relocations to correct substandard conditions,
- right-of-way required throughout improvement or significant amounts at relocations,
- no significant environmental impacts,
- no apparent controversy,
- no additional through lanes, and
- may involve runaround or marked route detour.

Program:

- open house or informational meeting when feasible alternatives determined, and
- news releases at inclusion in annual program, beginning of study, and award of contracts.

4. Program of Small Projects, in Localized Area, Proposed for Single Construction Season

Conditions:

- including resurfacing, railroad crossing improvement, traffic signals; and
- lighting, intersection improvement (no right-of-way).

Program:

- open house or informational meeting or radio/TV talk show, and
- news release of inclusion in program and award of contract.

These projects may be discussed at an involvement activity warranted for a single project. If so, the activity notices should so indicate.

5. Upgrading to Four or More Lanes by Adding Through Lanes In Rural Area

Conditions:

- no requirement to hold or offer hearing,
- additional ROW required,
- possible environmental impacts,
- change in function, and
- some relocation to meet standards or avoid developments.

Program:

- open house or informational meeting near end of data collection to check adequacy of other data and add information on local values (may require more than one if improvement traverses significant portions of more than one county);

- group presentations to special interest groups or others who show an interest in progress of project;

- open house or informational meeting to describe work completed to date, explain options to public, and receive public comment (may require more than one meeting if improvement crosses significant portions of more than one county); and

- news releases to announce initiation of study, results of public involvement activities, inclusion in annual program, and advertising and award of contract.

6. Upgrading to Four or More Lanes by Adding Through Lanes or Establishing One-Way Couple In Urban Area

Conditions:

- public hearing to be held or offered,
- right-of-way may or may not be required,
- possible environmental impacts,
- change in function and layout,

- may use streets not carrying marked State route traffic, and
- bypass may be option in smaller communities.

Program:

- open house or information meeting near end of data collection to check adequacy of other data and add information on community values (may require more than one);

- group presentations to city council, chamber of commerce, neighborhood associations as requested, service or social clubs as requested, any other special interest group requesting presentation; and

- workshops will be useful in developing alternative alignments, designs, and mitigating features when there is organized opposition and/or significant controversy. Workshops should specifically include members of all opposition groups and other interested individuals.

If significant issues remain unresolved:

- hold formal public hearing with informal sessions before and after or open house public hearing to get overall public reaction to unresolved issues.

If significant issues basically resolved:

- hold informational meeting or open house to explain project options and obtain public reaction and offer public hearing.

7. Major New Facilities such as Interstate or Freeway in Rural or Urban Area

Conditions:

- requires the holding or offering of a public hearing,
- involves significant environmental impacts, and
- involves significant additional land acquisition.

Program:

- Major projects may require separate Corridor and Design Studies; however, public hearings are not necessarily required during both Studies.

- Open houses or informational meetings held during data collection phase to obtain information on community values and affirm adequacy of other data.

- Group presentations to:

  - City Councils of communities involved,
  - county boards of supervisors,
  - elected State officials representing an affected region,
  - neighborhood or community associations,
  - chambers of commerce,
  - special interest groups,
  - service or social clubs, and
  - other groups as requested.

  (Presentations are recommended for local public officials whether or not requested. Other groups may be scheduled for presentations at their initiative or district initiative).

- Workshops, open houses, or informational meetings are recommended during the development of alternative designs, alignments, and mitigation features. Workshops are often effective in developing compromises among the various factions opposing or favoring the improvement. An "Information Exchange" (see Section 19-3.02(f)) also can be an effective way of focusing discussion and comment among diverse interests.

- An open house or informational meeting should be held after development of study alternatives and a public hearing offered or a public hearing (formal or open house) held to obtain public reaction to final options.

- Use of radio/TV talk shows may be helpful in developing interest in involvement activities and informing segment of public not likely to attend meetings.

- Newsletters may be effective when the project scope is sufficiently large to require multi-year study. Newsletters may also be used to announce the result of involvement activities.

News releases should be issued regularly during the duration of a Study to announce new developments, upcoming involvement opportunities, and the results of involvement activities. Each of the above activities may require more than one repetition depending upon the size and impact of the project and the scope of the opposition and controversy. The makeup of the Study area may influence the number of involvement activities. The above program should be repeated at the Corridor and Design Study phases if both are required.

19-4 NOTIFYING THE PUBLIC

Section 19-3 discusses criteria for the development of a public involvement program for a given project. After the makeup of the program has been determined, the district must decide how to transmit information to the public so it will be aware of the opportunities for involvement in project development. In preparing an announcement for a public involvement activity, decisions can be facilitated by addressing the following questions:

- Who should be contacted?
- How often should they be contacted?
- When should they be contacted relative to the timing of the activity?
- What activities should they be informed about?
- What information should be released about the improvement and the activity?
- How large a geographic area should be covered by the distribution of the announcement?

The following sections discuss these topics.

19-4.01 Announcements of Involvement Activities

Generally, activities to which the public is invited (e.g., open houses, workshops, informational meetings, public hearings, open phone lines) should be advertised via the news media, posters, mailing lists, or other media as needed. General announcements are not normally required with presentations to specific groups and other activities which the general public is not expected to attend; instead, a group requesting a presentation will arrange for attendance. When the district initiates the presentation, it will arrange for attendance through appropriate invitations. There may be occasions where the group involved will release the results of these meetings to the media. Clubs or other special interest groups may have a standard practice of issuing a news release summarizing the activities and programs that occur at their meetings. Occasionally, the district may announce the results of certain non-public activities. For example, the results of opinion polls or questionnaires may be of interest to the general public and appropriate for general release.

19-4.01(a) Timing and Number

Each public involvement activity will be the subject of a minimum of two notices to the public. More than two notices may be published if a special effort is needed to ensure an adequate public response or if there is considerable public interest in the project.

The first notice of a public hearing on a project requiring an EIS shall be published at least 30 days in advance of the hearing. The first notice of a public hearing on a project requiring an Environmental Assessment/FONSI or a Categorical Exclusion, and the first notice for all other public involvement activities, shall be published at least 15 days in advance of the hearing/activity. In all cases, the second notice shall be published 3 to 7 days before the activity. If notices in addition to the two required notices will be beneficial, they may be scheduled up to two months ahead or during the week preceding the involvement activity.

Another announcement which should be used where available is a listing of the activity in a community calendar or other similar service in news media that lists activities and meetings of general interest that occur on that day or the following day. Some newspapers have notices of important events to occur on that day on the front page. Community calendars or public service announcements are fairly common in both electronic and print news media, are generally free, and should be used where available.

The unique circumstances surrounding a particular project may affect the timing of notices. If a project requiring an Environmental Assessment/FONSI or a Categorical Exclusion is known to be controversial or the subject of organized opposition, the district should consider extending the minimum 15-day public hearing notice timing to 30 days. Extension of the timing for the notice is not necessary on these projects if an informational meeting, or other mechanism that will assist the public in obtaining project information and preparing for the hearing, precedes the hearing.

19-4.01(b) Distribution

Before steps are taken to notify the public, the district must determine which groups or sectors will be contacted and what means or media are most appropriate. When identifying groups to be notified, consider several general categories. Those who live in the geographic area of the project and may be affected are one category. Another category is groups who are known to be or are likely to be directly affected by property acquisition. Potential users of the facility are another interested group. If a route is heavily used by commuters, these users likely will be concerned with the effect of alternative routing both during and after project construction. Owners of businesses along a route may be concerned about accessibility. Other groups may be singled out for attention because of special communication needs. This sector could include ethnic neighborhoods, low-income neighborhoods, the aged, non-English speaking individuals, and persons with a disability.

Once the proper recipients of project information and interaction have been identified, the next action is to determine the most appropriate means of announcing the involvement activity. It is *not* necessary to publish legal notices of upcoming activities. Paid advertisements in newspapers and on radio and television are acceptable and frequently more effective. The Office of Public Affairs is available and should be contacted for aid in the preparation of photo-ready displays to reduce the costs of using paid advertisements. Where local news media are reluctant to carry such advertisements, a legal notice may be one means of ensuring verbatim publication and specified timing. It may also be necessary to advertise notices in more than one newspaper or on more than one radio or TV station to provide adequate coverage.

In predominantly ethnic or non-English speaking neighborhoods, it may be appropriate to publish a notice in a foreign language newspaper. Newsletters of various clubs and organizations may also provide an effective means of notifying specific groups. A local chapter of a state or national association, a church, the Chamber of Commerce, or a service club may publish periodic newsletters and may be agreeable to including announcements of upcoming public involvement activities free of charge. Translations of notices and project documents will be made available when large numbers of non-English speaking residents will be affected by the project.

It may be appropriate to place posters or to distribute handouts or pamphlets on street corners in neighborhoods that are likely to be affected. Announcements of upcoming activities may be mailed to anyone on established mailing lists or to anyone who has shown an interest in the project or in highway projects in general. If low-income and/or minority populations will be affected by the proposed project, special efforts to announce public involvement activities may be necessary. In accordance with Executive Order 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," and the ensuing USDOT Order, the public involvement process must be thorough and fully inclusive. It may be necessary to distribute pamphlets or project notices door to door for residents or place notices in churches or other community centers.

Appearances on radio and TV talk shows are also effective in many communities. Copies of all notices announcing upcoming public involvement activities should be forwarded to the Office of Public Affairs in the central office of the Department of Transportation.

19-4.01(c) Content

For an announcement in a newspaper to be effective, it must be strategically located and of sufficient size to attract attention. The announcement should state the type of activity, the purpose of the activity, and the time and location. It should state that all interested persons are invited to attend and participate and should also state that district personnel will be present to receive input, provide information, and answer questions. The announcement must include a description of the proposed improvement and a reference to any significant encroachments into base flood plains, significant impacts on wetlands, and possible road closures. If noise

abatement measures are being investigated for potential implementation as a part of the proposed project, the notice also should include a statement to that effect. If the activity is a public hearing and is intended to meet the requirements of Section 4-510 of the *Illinois Highway Code* (605 ILCS 5/4-510) on corridor preservation (see Section 19-2.09), the announcement should indicate that the hearing will afford an opportunity to provide testimony on a map showing the location and approximate widths of right-of-way needed for certain future additions to the highway system in accordance with the cited section of the *Highway Code*.

On District One projects outside of the City of Chicago, notices must also indicate that the Division of Highways will process a permit for construction in a regulated floodway whenever such permits are required for the project. The announcement must indicate that EISs or Environmental Assessments and engineering reports will be available for inspection at the activity and prior to the activity at the District Office.

When individuals or businesses will be relocated, the notice must state that right-of-way acquisition and relocation assistance information will be available. It should further indicate the name, address, and telephone number of the person to contact to obtain additional information. Show the fax number for the District Engineer's office and the district's telecommunications device for the deaf (TTY) number in the upper right-hand corner of the announcement.

Where possible and economically feasible, a map should be included to further define the area affected by the project. Identify a contact person and telephone number for the news media in the upper right-hand corner. This may or may not be the same person listed in the body of the notice for the public to call.

Announcements of upcoming activities also must contain information on accessibility for persons with a disability. The wording will vary depending on whether the meeting place is:

- fully accessible in compliance with Capital Development Board (CDB) standards,
- partially accessible but not in full compliance, or
- not accessible.

The following applies:

1. When the meeting site fully complies with CDB Accessibility Standards, the meeting notice should contain a statement similar to the following:

> *This meeting will be accessible to persons with a disability in compliance with current Accessibility Standards prepared by the Capital Development Board. Persons with a disability planning to attend and needing special accommodations should contact the person listed in this Notice by (date 5 days prior to meeting). The contact may be by telephone, in writing, by fax or by telecommunications device for the deaf (TTY).*

2. When the meeting site contains wheelchair access to the meeting room but does not fully comply with CDB Accessibility Standards (because of inadequate rest room facilities, inadequate number of designated accessible parking spaces, etc.), the notice should contain a statement similar to the following:

> *Persons with a disability planning to attend this meeting should contact the person listed in this Notice by (date 5 days prior to meeting) to advise of planned attendance. The contact may be by telephone, in writing, by fax or by telecommunications device for the deaf (TTY). If special accommodations are needed, the contact person should be informed at the time of contact. The meeting room is accessible to persons with a disability.*

When notified that a person with a disability plans to attend the meeting, the district should advise that person of the meeting site's general areas of noncompliance with the Accessibility Standards. The person should also be informed that a suitable, fully accessible site was not available.

3. When suitable facilities that allow access to the meeting room for persons with a disability are not available, the notice of the activity should contain a statement similar to the following:

> *Persons with a disability desiring to participate in this activity should contact the person listed in this Notice by (date 5 days prior to meeting) to make arrangements for participating. The contact may be by telephone, in writing, by fax or by telecommunications device for the deaf (TTY).*

When contacted, the district should advise the person with a disability that fully accessible facilities suitable for this activity were unavailable in this geographic area. The person with a disability can then be offered alternatives for involvement in the development of the project. These alternatives may include the following:

- A representative(s) of the district may come to the person's home or place of business to discuss the project.
- A mutually acceptable accessible facility may be selected for a meeting.
- Arrangements may be made to lift or convey the person with a disability to the meeting room. (This may not be possible in some instances.)

Other options mutually acceptable to the person with a disability and the district may be used.

Figure 19-4A presents an example of an announcement of an upcoming activity.

Fax: 416/343-6414
TTY: 217/524-4875

Media Contact: David Hall
Ph.: 416/343-6437

Informational Meeting
Scheduled by
Illinois Department of Transportation
For Improvement of U. S. Route 52 near Central City

The Illinois Department of Transportation (IDOT) announced today an informational meeting has been scheduled for 7:00 P.M. on September 22, 1998 in the Central City High School Gymnasium for the purpose of discussing the improvement of U. S. Route 52 from its intersection with Main Street east to the corporate limits of Central City. All persons interested in this project are invited to attend the meeting. Persons with a disability planning to attend this meeting should contact the individual listed below by September 17, 1998, to advise of their planned attendance. The contact may be by telephone, in writing, by fax, or by telecommunications device for the deaf (TTY). If special accommodations are needed, the contact person should be informed at the time of contact. The meeting room is accessible to persons with a disability.

The meeting will be conducted on an informal basis. A brief presentation on the status of the project, the proposals under consideration, and the decisions to be made will begin at 7:00 P.M. Representatives of the IDOT will be available from 6:00 P.M. until the presentation and also after the presentation to discuss the project. The IDOT representatives will answer individual questions and record comments offered by those in attendance. Verbatim comments will not be recorded. The presentation will address topics such as the need for the project, the design alternatives under consideration, right-of-way acquisition and relocation assistance, and the tentative construction schedule. One alternative under consideration involves a potentially significant encroachment on the Salt Creek flood plain. The Division of Highways will process a Permit For Construction in a Regulated Floodway for the replacement of the bridge over Salt Creek. *(A statement concerning permits for construction in a regulated floodway is required only for District One projects outside of Chicago.)* Preliminary reports, including an environmental assessment and an engineering analysis with drawings, maps, and aerial photography, will be available for inspection and viewing during the entire time the IDOT representatives are present. This same material currently is available for review and inspection at the District office at Richland.

For more information, contact George Robertson, District Engineer, 1200 East Main Street, Richland, Illinois 62673, telephone 416/343-6420, fax 416/343-6414, TTY 217/524-4875.

ANNOUNCEMENT EXAMPLE

Figure 19-4A

19-4.01(d) Offer of Public Hearing

When regulations require a public hearing, but other activities have apparently satisfied the need for public involvement, or when there is no apparent adverse impact or interest in a project, the regulations may be satisfied by publishing a notice in a newspaper offering an opportunity to request the Department of Transportation to hold a public hearing. The district should publish the notice of the offer at least twice, approximately one week apart. More than two notices may be published if it is considered necessary to provide adequate coverage of those affected by the project. Publish the notice in at least one newspaper of general circulation in the vicinity of the project. If a notable segment of the local population is non-English speaking and there is a foreign language paper serving the area, it should also be used to carry the notice. The deadline for requesting a public hearing shall be at least 21 days after the notice announcing the offer first appears in a newspaper.

The notice offering a public hearing should state that a public hearing will be held if sufficient interest is demonstrated. The District Engineer shall make the determination of sufficiency. If sufficient interest is not demonstrated, each requestor shall be contacted by a district representative or by certified mail with return receipt and informed of the lack of sufficient interest. The district shall also advise the requestor that comments are welcome. If a personal contact is made, record comments during the contact. If the contact is by certified mail, include a stamped, self-addressed envelope and a name, telephone number, fax number, and telecommunications device for the deaf (TTY) number for returning comments. Use the fax number for the District Engineer's office and the district's TTY number. Address any comments received in the Corridor, Design, or Combined Study Report.

The offer of a public hearing need *not* be announced by a legal notice in the legal notice section of newspapers. Public hearing offers can be announced by use of paid advertisements in newspapers and may be supplemented by radio and TV announcements, posters, or other means. Legal notices may be used if it is the only means to ensure verbatim publication and specified timing. The size of paid advertisements should be sufficient to attract attention and to contain the information that is necessary. Contact the Office of Public Affairs for aid in the preparation of photo-ready display advertisements to reduce the cost of using paid advertisements. Public hearing offers should normally contain the following information:

- Proposal and project description, including a reference to significant encroachments in flood plains and significant impacts on wetlands.
- Information concerning the preparation and availability of EIS's and EA's.
- An invitation to the public to request a hearing.
- The name and address where requests should be sent.
- The time limit available to submit a request.

- An announcement that data are available for viewing and inspection including the name, address, telephone number, fax number, and TTY number that should be contacted for arranging to view that information and to obtain other information desired.

- A map showing the location of the improvement.

- A contact person and telephone number for the news media in the upper right-hand corner.

Figure 19-4B presents an example of a typical offer of a public hearing.

19-4.02 Mailing Lists

Each district should develop and maintain mailing lists for distributing information. A general mailing list should include agencies, organizations, and appropriate individuals that are generally interested in being advised of all highway projects scheduled within the district. The general list consists primarily of Federal, State, and local agencies usually interfacing with the Department on highway projects; entities such as major industries, environmental groups, and local transportation operators; and individuals, including elected officials, who have requested and have a need for project information. To serve the intended purposes, those included in the general list should be sent copies of announcements of public involvement activities and other general information as appropriate. Confirm names and addresses periodically to keep lists current and to determine whether the parties are still interested in receiving project information.

In addition to a general mailing list, the district should develop specific lists for individual projects. These project-specific lists include the general mailing list and any additional persons or groups that are interested in specific highway projects. Individuals and organizations may be added to the list when requests are received for information on a specific project or on the basis of attendance lists that are maintained as part of involvement activities. These lists may be used to distribute information on the resolution of certain problems discovered during involvement activities. The project-specific mailing lists may be retained for use with other planned projects in a particular area, or they may be discarded following completion of the project for which they were developed.

19-4.03 General Releases of Information

Releases of information to the news media can be a very effective tool for minimizing adverse public reaction during both the daily operations of the Department and the development of proposals and final plans for specific projects. Maximize effectiveness by writing the release in layman's terms and avoid using jargon and technical terms as much as possible. Releases of information involving the routine operations of the district may be at the discretion of the District Engineer. Releases of information on activities which are controversial or in which the

Secretary has shown an interest, such as major freeway projects, should be coordinated with the Office of Public Affairs. That Office also may initiate releases of information in response to inquiries from the news media or to address a demonstrated public interest. It may also release information concerning involvement activities for projects of Statewide interest when advised of their scheduling. All releases of information should include, in the upper right-hand corner, a fax number, a TTY number, and the name and telephone number of the person the media may call for additional information.

Fax: 416/343-6414
TTY: 217/524-4875

Media Contact: David Hall
Ph.: 416/343-6437

Public Hearing Offer
by
Illinois Department of Transportation
concerning
Improvement of U. S. Route 52 near Central City

The Illinois Department of Transportation is proposing to improve U. S. Route 52 from its intersection with Illinois Route 1 to its intersection with Main Street in Central City. The project will consist of reconstructing the existing two-lane pavement to provide four lanes, two in each direction, separated by a 14-foot (4.3-m) painted median. The project will include the signalization of the intersections of U. S. Route 52 and Illinois Route 1 and U. S. Route 52 and Main Street. Curb and gutter and underground drainage will be provided as a part of this project. Alternatives under consideration have potentially significant impacts to Moore's Slough, approximately 0.5 miles (0.8 km) east of Illinois Route 1. An Environmental Assessment has been prepared for this project.

Any interested person who believes a public hearing should be held for this project may request that a hearing be held by contacting George Robertson, District Engineer, 1200 East Main Street, Richland, Illinois 62673, telephone 416/343-6420, fax 416/343-6414, TTY 217/524-4875. To be considered, requests must be received by September 23, 1998. A hearing will be held if the public demonstrates sufficient interest.

Maps, drawings, aerial photography, the Environmental Assessment and other information are available for viewing and inspection by the general public in the District office at the above address. If additional information is desired, contact the District Engineer.

PUBLIC HEARING OFFER EXAMPLE

Figure 19-4B

19-5 PLANNING THE MEETING

This Section will discuss the process for planning an individual activity, whether it is an open house, an informational meeting, or a public hearing. The planning activities have been divided into four subsections — Pre-Meeting Activities, Preparation of the Meeting Site, the Presentation, and Post-Meeting Follow-up.

The district must carefully prepare and develop public involvement activities not only to attract and hold the public's attention but also to create a pleasant atmosphere for discussion of highway projects.

19-5.01 Pre-Meeting Activities

Suggested criteria for selecting a site for an involvement activity and the kinds of materials and equipment that may be necessary have been previously described. The following information provides additional guidance on the meeting preparation once the meeting site has been selected and the timing of the activity has been set.

19-5.01(a) Inspecting the Site

Before district personnel begin the preparation of exhibits and presentations, inspect the selected meeting site. A rough drawing of the shape of the room(s), noting the approximate dimensions, may be helpful. Note other features such as stages, projection rooms, light switches, electrical plug-ins, microphone jacks, entrances, and exits. The person(s) conducting the inspection of the meeting site should also note whether there are other rooms available for possible use for tape recording public statements or in answering individuals' questions concerning right-of-way, relocation, and acquisition. This inspection may be combined with the accessibility inspection discussed in Section 19-3.03.

The person(s) conducting the inspection should examine any equipment that the facility will provide to ensure that it is in good working order and that district personnel are familiar with its operation. Public address systems and slide projectors should be provided special attention. At the time of the site visit, if practical, discuss with the facility manager arrangements for setting up tables and chairs and for bringing equipment to the meeting room on the day(s) of the involvement activity.

When conducting the site inspection, the district representative(s) also should evaluate whether signs will be needed outside or inside the meeting facility to direct participants to the involvement activity.

19-5.01(b) Preparations at the District Office

During the course of developing a public involvement program, the district generally will have gained some insights on the profile of the potential audience. The knowledge of which sectors of the public are likely to attend, what they are likely to expect, and their likely positions may be helpful in selecting a format for the involvement activity that will be most effective.

The notices of upcoming public involvement activities will instruct persons with a disability needing special accommodations to contact the district by telephone, in writing, by fax, or by TTY to advise of their anticipated attendance and any special needs. The district contact person should be prepared to answer questions regarding the accessibility of the meeting site and should complete a Request for Accommodation form (available from the Department of Human Services) for each contact with a disabled individual. If interpreters for hearing-impaired persons or materials for visually impaired individuals have been requested, make every effort to provide the requested services. The Department of Human Services has produced a Directory of Sign Language Interpreters that contains a partial listing of interpreters in Illinois. Additional information on interpreters and Brailling sources is available from the central and field offices of the Department of Human Services. The district may prepare tape recordings of printed materials when Braille materials are unavailable or not acceptable.

If the involvement activity will include a period for questions or informal discussion, the persons responsible for providing information at the activity should be prepared to respond to anticipated questions. Informal "brainstorming" sessions in advance of the activity may be helpful in generating possible questions that may be asked.

When developing handout materials, in many cases some material from previous involvement activities or previous projects may be usable. For example, information regarding right-of-way and relocation assistance will remain essentially the same. For new materials that will be developed, schedule appropriate lead time for preparation of displays and written materials and for printing handouts. Allow sufficient lead time for printing and other preparation activities whether the work will be performed commercially or by the Aerial Surveys Section or the Printing and Duplicating Section in the central office. Review any activities requiring action outside the district office to determine the proper lead time for completion.

The district office may prepare the photo-ready copy for notices of public involvement activities or may request assistance from the Office of Public Affairs or the Aerial Surveys Section. After the notices have been sent to the newspapers, the district should ensure that the notices appear in the papers at the specified time.

All personnel who will be expected to participate in the involvement activity should be familiar with the format, schedule, objectives, and any applicable time constraints for their participation. This includes the moderator, if one will be used, who may or may not be an employee of the Department of Transportation. Presentations for the involvement activity should be prepared in accordance with Section 19-5.03.

A checklist is an excellent tool for ensuring that final preparations do not overlook required equipment and supplies such as slide projectors, displays, and handouts or reminders to involved personnel. Spare equipment and parts such as extra bulbs for projectors, a spare slide screen, extension cords, and other emergency equipment can be extremely valuable in keeping the meeting on schedule in the event of equipment failure.

19-5.02 Preparing the Meeting Site

When all personnel have reached the site and set up the equipment supplied by the district, make a final check to ensure that all equipment, especially that furnished at the site, is operational. Set up a table at each entrance that will be used for access into the meeting room. The table(s) should be used for registering attendants and for distributing printed materials. Assign personnel to each table to handle the registration and to direct attention to the available handout materials. Entrances not used for the meeting should be locked and signed. Place other signing, as determined necessary in accordance with Section 19-5.01 at the meeting location. Set up displays as previously planned and orient them with North in the same direction in each.

19-5.03 The Presentation

19-5.03(a) General Requirements

Public participation and attitudes may depend upon how well the personnel conducting the activity understand and react to the public's viewpoints and reasons for participation. With the proper approach, both the public and the Department can use the involvement activity to benefit its interests.

A frequently overlooked element that is important to the overall success of the involvement activity is the time required for completion. Normally, an audience will tolerate a two-hour meeting. With this time frame, limiting the presentation portion to 30 minutes (40 minutes on major projects) provides sufficient time to discuss the basic features of the proposed improvement while recognizing the participants' desire to have questions answered with as little delay as possible. To conform to the time allotted, carefully prepare and review the presentation to ensure that only necessary information is included. Practice sessions are helpful for allowing the presenter to fit the presentation to the scheduled time limits. When more than one person will be involved in the presentation, complete a practice session(s) with all of the presenters prior to the actual presentation at the involvement activity.

Most of the people attending a public involvement activity will not be familiar with the technical language associated with highway projects. Those making presentations at the involvement activity should minimize the use of technical terms in their presentations and in their responses to questions. The personnel conducting the involvement activity should convey an attitude of friendliness, understanding, respect, and cooperation to promote a positive atmosphere for the

involvement activity. If non-English speaking persons are expected, it may be appropriate to provide oral and written information in more than one language. If visually impaired persons will be attending the activity, it may be appropriate to have the information from the handout materials available in Braille or on tape.

19-5.03(b) Content

Presentations for public involvement activities should follow basically the same outline and address the same general topics. The selected approach may vary somewhat, and the exact nature of the data presented may vary from activity to activity depending upon the anticipated participants. The following paragraphs discuss the general topics that should be addressed in a presentation and provide some insight on the manner in which the topics should be approached.

The opening speaker or moderator should first welcome those in attendance and explain the purpose of the activity. The welcome should be sincere and friendly. The opening remarks are extremely important for they may set the tone for the entire activity. Those in attendance should understand from the explanation of the purpose whether they are providing input into the basic data gathering effort or whether they are involved in choosing between alternatives. The opening speaker should also explain the format to be used. The speaker can describe what is involved in a workshop, an informational meeting, or a public hearing, and the method that will be used to record comments.

The moderator should introduce all staff participants and district representatives and describe their role in the program. The public must be made aware that those with the expertise required to address their questions are present. If staff participants will be available for informal questioning after the presentation and formal comment period (if one is being held), the speaker may also indicate where the various experts will be located during the informal discussion period. At this time in the program, remind the audience of handouts (if available) and briefly describe the contents of the handout. If exhibits used in the presentation correspond with information in the handouts, attendants may use the handouts as a presentation supplement to their benefit.

At this point, the presentation should describe the project in appropriate detail. If the purpose of the meeting is to collect data, the description should briefly outline the work that is proposed and then describe the type of information that is desired from the participants. If the project is further advanced and the participants are expected to offer information concerning the development of alternatives, the description should include a discussion of some of the work completed to date. If the involvement activity occurs when the project is in an advanced stage and the purpose is to provide information that will facilitate a choice among alternatives, provide more information to indicate the status of the improvement and the scope of the options or alternatives that remain. It should include descriptions of design features and beneficial and adverse impacts.

Often when describing a project to the participants, it is helpful to use examples of similar design in the immediate area of the proposed project. For example, in describing the type of medians that are under consideration, the speaker should emphasize that the median types being considered are similar to the flush painted median as now exists on Main Street, or a curbed-barrier median as now exists on Broadway. The participants can thereby relate directly to an operational situation with which they are already familiar.

Another topic that should be addressed during the meeting presentation is the tentative schedule for the remaining steps in the project. The public should be apprised of future opportunities to participate in the development, when the Design Study Report will be completed, when construction will be initiated, and when construction should be completed. If construction is not scheduled during the current fiscal year, explain that priorities may vary with future funding levels, crash experience, required maintenance effort, and changes in traffic volumes.

A subject that should be briefly discussed is the acquisition of right-of-way and the availability of relocation assistance. If the purpose of the activity is to offer choices among alternatives, then information should also be available which would indicate the approximate right-of-way takings and the properties affected. Advise interested property owners of whether they will be affected and to what extent. Explain that individual questions concerning the acquisition process and land acquisition personnel will answer the availability and limitations of relocation assistance during the informal period. Indicate where the land acquisition personnel will be located during the informal period. Discussions of land acquisition processes that involve more than a statement of availability should be brief and in proportion to the overall time limit of 30 minutes.

If a public hearing is held to satisfy the requirements for a road closure hearing, the discussion should include a statement of need for road closings, the needs of local traffic, and the effect of the closing on other highways in the locality. The discussion should further address access to schools, churches, markets, and trade or community centers. Discuss all anticipated impacts and benefits of various closing options.

The last portion of the presentation should address the procedure that will be used during the formal comment period if included in the meeting. If there are time limitations on speakers or other procedures to be used, the participants should be aware. Remind the audience that Department personnel will be available at discussion centers to answer individual questions after the formal part of the presentation is complete. If any activities are occurring in a separate room, the participants should be reminded of them. Before closing, announce that written comments received within 10 days will be included as a part of the hearing transcript or meeting records; however, comments are welcomed at any time during the development of the project. Present the name and address of the person to whom comments should be submitted.

The information described in the preceding paragraphs should be developed to answer as many questions as possible for the participants. Informal pre-meetings or brainstorming sessions as

described in Section 19-5.01(b) may also aid the presenters in determining what information and topics should be included in their talk.

19-5.04 Audio-Visual Aids

19-5.04(a) General

A major problem in developing public involvement activities is how to convey a large amount of technical data to the public in a manner and language that they can understand and in a relatively short time. The majority of those who attend public hearings are unable to understand the technical language and engineering drawings that are typically used by location team personnel in their studies of a particular project. Audio-visual aids are capable of significantly increasing the ability of the public to understand the information being presented at a public involvement activity. As a result, the use of effective audio-visual materials and techniques can be a major asset to the successful implementation of public involvement activities.

Use the following audio-visual aids for public involvement activities as appropriate:

- overhead projector,
- slides,
- motion pictures,
- videotape,
- audiotape,
- large writing pad and tripod,
- fixed exhibits,
- models,
- demonstrations, and
- chalkboard.

Several of these aids may be combined for an even more effective presentation. A coordinated slide and audiotape show is a good example of an effective combination.

Exhibits should remain as simple as practical, omitting contour lines, curve data, and other technical information that may not have meaning to the majority of those attending the activity. Label the exhibits to indicate the project stage such as preliminary, proposed, or draft and, if applicable, to contain a title such as Alternative 1 of 3. Identification of local landmarks shown on exhibits can be helpful in orienting viewers. Common landmarks include major street intersections, rivers, parks, large buildings, etc. They should be identified with large bold letters and should be readable from a considerable distance.

In the preparation of visual exhibits, the use of colors to depict different alternatives or features of the proposal can be important. The colors themselves can elicit emotional responses from the participants. A general rule is to refrain from using strong, bright colors. Bright red, pink,

yellow, green, and similar colors appear objectionable and should be avoided where possible. Colors that appear more satisfactory are medium blue, medium to dark green, golden yellow, and light brown. If one alternative is shown in a particular color on one exhibit, it should be shown in the same color on all exhibits. This is also preferable when examples such as bar graphs are used for quantitative comparisons. If quantitative comparisons are appropriate, a bar graph is one means of demonstrating such comparisons quickly and simply. In general, all exhibits should be simple and as easy to understand as possible.

Another effective means of communicating with the public is the use of examples of similar existing facilities near the project area. In many cases, such examples will be helpful to the public in visualizing the scope of the project and its effects on them individually or as a community. For instance, instead of using a typical section of a proposed arterial street, an example of a local facility that is familiar to the attendees may be more effective. The familiarity of the attendees with the example facility should lead to a better understanding of how the proposed project will affect access to homes and businesses, the amount of right-of-way that might be required, and the vehicular and pedestrian characteristics of the facility. Usually, examples of this nature are superior to technical drawings in conveying a message to the public.

BDE has capabilities for video imaging, computer-imaging, and photomontage. These technologies can be used to produce perspective views of the project setting with project alternatives superimposed to show how they will appear if constructed. These techniques are helpful in explaining how an alternative may alter the project setting and are especially useful in responding to concerns about potential visual quality impacts. Districts may contact BDE to request assistance in producing video-image, computer-image, or photomontage exhibits.

19-5.04(b) Fixed Exhibits

Fixed exhibits are defined as large-size drawings, maps, aerial mosaics, etc., that are prepared for use at public involvement activities to display proposed designs and alignments that are under consideration. Fixed exhibits can be very helpful during public involvement activities because some design concepts and alignments are difficult to visualize from a verbal description alone. Some fixed exhibits may serve a dual purpose in that large-scale maps or aerial mosaics are often prepared for normal use by a location team during the course of its study. Although fixed exhibits are often prepared for a specific purpose and used only once, their use may be increased by photographically reproducing them or using plastic overlays so that alternatives can be drawn on the exhibit or overlays during workshop sessions. Smaller exhibits may be enlarged photographically for use as a fixed exhibit at a public hearing.

Fixed exhibits may also be used effectively in combination with other audio-visual aids at public involvement activities. Because slide presentations have a relatively short duration and require a darkened room, fixed exhibits that duplicate slides can be used for discussion following the presentation. Handouts may also contain reduced photocopies of fixed exhibits. Some fixed exhibits may be retained for future use if they display a standard design or feature that might be

a consideration in another project. Districts can establish a library of reusable exhibits so that standard design exhibits will not need to be prepared for each involvement activity.

Although fixed exhibits are useful and flexible visual aids, they have some disadvantages when compared to audio-visual aids. They require considerable space for displaying, storing, and transporting. Another limitation is the time and expense often required to prepare a large drawing or display.

19-5.04(c) Slides

Slides offer many advantages for use in a public involvement activity. They can be used to display almost any subject and require little equipment and minimal experience to prepare. This permits some experimentation and innovation by the preparers of the slide presentation. The number of slides that can be used at a presentation is controlled only by the time available, which may allow hundreds of slides during a single presentation at a public involvement activity. These presentations are very effective because of the large amount of information that can be disseminated and because of their ability to attract and maintain audience attention.

Slides of actual locations along the proposed project allow meeting attendees to orient themselves to familiar surroundings while the presenter describes the proposed work at each of the locations displayed. They also demonstrate that district staff has been to the project site and are aware of existing conditions. The user can vary slide presentations by using dual projectors and screens to display both an overall view of the project and, on a separate screen, a blow-up showing a particular location and how it will be treated.

Slides are a natural medium for standard presentations such as right-of-way acquisition and relocation assistance, Federal-State relationship, etc. The district can prepare a set of slides and a written dialogue once and use this repeatedly at appropriate public involvement activities. Standard presentations can be made more sophisticated if slides are combined with an audiotape for a coordinated slide-tape presentation.

Slides should be simple so the information they display can be quickly absorbed and understood by viewers. A general rule is that slides should be displayed on the screen no less than six seconds nor more than ten. Constant change creates motion that maintains audience attention, which can be created by using a building-block technique with one basic slide. An example of this is the presentation of a list of items. The first slide shows the title and Item #1. The second slide shows the title and Item #1 with Item #2 added in a contrasting color. The third slide shows the title and Items #1 and #2, with Item #2 now being the same color as the title and Item #1, with a third item now in contrasting color. This technique effectively presents a list of information while emphasizing each item as it is added. Lettering on slides should be sufficiently large to be read by the naked eye while holding the slide to a light. If it cannot be read without magnification, it will probably be too small for use in the presentation. Experience demonstrates that slides are easiest to understand when they contain no more than six lines of

writing per slide. Slides composed solely of written messages are also more effective if they use light or white letters on a black background.

Many options are available for an effective slide program. Equipment is available to use more than one projector on a single screen including equipment that will fade from one slide to the next. Multiple screens and multiple projectors may be used to display more than one slide at a time. Also a coordinated slide-tape program may be prepared with the tape actuating the slide projectors. Districts interested in using equipment not currently available in their office should contact the Office of Public Affairs to determine if the equipment is available. This equipment also can be rented, which has the advantage of allowing experimentation without purchase.

When a slide presentation will be part of a public involvement activity, ensure in advance that the appropriate equipment and facilities are available so the program will not be unnecessarily interrupted. Check items such as compatibility of slide trays and projectors, number and size of screens, and availability of back-up projectors and account for these prior to the meeting. Also, include extension cords, spare bulbs, etc., to minimize the adverse effect of any equipment failures.

19-5.04(d) Videotape and Film

Videotape and film can be practical audio-visual alternatives for public involvement activity presentations. Although their use will usually be more costly and require more expertise than other audio-visual means, they offer advantages that, in some instances, are offsetting. Videotape is somewhat limited in transmitting a variety of information to large groups because of the size of monitors. Videotape is, however, very effective for repetitive showings of the same information to small groups. Movies can be used with an audience size limited only by the size of the facility and screen and the audio capability. This need might commonly occur at open houses and at briefings of small groups such as homeowners or civic organizations. The preparation of videotape or motion picture programs may initially require the purchasing of outside expertise. However, as experience is gained, in-house staff may become proficient in developing these presentations. The Office of Public Affairs maintains information on the preparation of these types of presentations.

Technical movies may be integrated with other audio-visual aids to demonstrate certain design techniques that may be new or not available in the project area for local familiarity. An example of this is demonstrating via film of actual crash tests the effectiveness of a concrete median barrier compared to a guardrail median barrier. The district may obtain technical films demonstrating the effectiveness of specific design features from a variety of sources including FHWA and TRB.

19-5.04(e) Miscellaneous Audio-Visual Aids

There are other audio-visual aids that are not as common as those which have been discussed. Many of these are more applicable to serving special needs that do not commonly occur. The use of models, for example, may not be appropriate on most projects; however, they may be appropriate to demonstrate complicated interchanges or complex urban joint development projects. Demonstrations for use at a public involvement activity are also generally reserved for a special situation. The district may use a demonstration to explain the effectiveness of a specific design feature such as a noise barrier.

Overhead projectors may be used effectively, and they offer many of the advantages provided with slides. They do, however, require constant manipulation by the speaker or an aide, which can detract from his/her effectiveness. Overhead projectors, however, offer the advantages of allowing the speaker to write on the display during the presentation. This may be useful at workshops or informal small group meetings when the speaker may be reacting to input. The use of overhead projectors requires a relatively small investment. Personnel with limited experience can prepare transparencies and other displays at a reasonable cost.

Another visual-aid technique is the use of a large writing pad mounted on an easel and drawn on with felt tip markers. The usefulness of this technique is limited by the ability of the speaker or an aide to draw and sketch as the presentation is being made.

A large writing pad and felt tip markers may be used to record spoken comments. This is in addition to recording comments by a court reporter or tape recorder. This ensures the speaker that his comment is received and interpreted correctly. Large writing pads are also effective at workshop sessions to record comments, interests, suggested alternatives, etc. The working groups usually prioritize these, and they can become a significant source of input for district decision making.

Audiotape is another aid that may be used to present information to the public and control precisely the length and content of a talk. Audiotape is useful in the preparation of standard presentations that are repeated, such as those concerning right-of-way acquisition and relocation assistance and the Federal-State relationship. When recording an audiotape, it is important to select a skilled narrator with experience in voice delivery and inflection.

19-5.04(f) Combinations of Audio-Visual Aids

Many audio-visual aids are more effective when combined with each other during a single program. For example, a speaker may use slides, make a reference to a slide-tape presentation on relocation assistance, return to a live talk with slides, break for a movie demonstrating the effectiveness of a design feature, return again to a live talk, request input from the public, and use a large writing pad to record comments. The variety of using more than one audio-visual aid will keep the audience attentive and provide a maximum amount of information.

Section 19-5.04(c) discusses the use of a combined slide-tape program. Equipment is available which uses 4-track tapes so that the narrative can be prepared on one track and signals can be recorded on other tracks to actuate the slide projectors. This system provides maximum control over the length of the program and the information presented. Other variations of slide programs involve the use of multiple projectors with one screen and multiple projectors with multiple screens. Multiple screens can be effective when showing an overall view of an improvement with detailed coverage on an adjacent screen. The same advantages can be gained when a list of factors is shown on one screen and specific examples displayed on the adjacent screen. Many combinations are possible and experimentation and innovation can result in improved programs.

19-5.05 Post Activity Follow-Up

Those who attend a public involvement activity are normally interested in the results of the input provided. This includes the follow-up to questions for which answers were not available at the time of the activity. The public may determine the success or failure of a public involvement activity based on the actions taken after the activity. Therefore, follow-up is a significant action to minimize opposition and create a positive relationship with the public.

The appropriate type of follow-up will partially depend on the public's attitude at the public involvement activity. If the public has been generally supportive of the proposed project, it is probably not necessary to initiate a large-scale follow-up. It may suffice to write individual letters to those who asked questions which were not answered and to release information to the news media on any changes that were made as a result of the input. If the public attending the activity was generally opposed to the project, a more extensive follow-up is appropriate. In this case, write those individuals who had questions that were not answered and provide the information requested or explain the results of the investigation. Issue a news release that notes some of the major comments made at the activity and the Department's reaction to these comments. The release should also include a discussion on any changes resulting from the activity. For projects of major scope where a mailing list has been developed and where public involvement activities may span a long period of time, a newsletter might be developed and mailed to those on the mailing list and to those who attended the activity. Local radio and TV talk shows may also be used to disseminate information following a public involvement activity of major scope and impact.

In many cases, project revisions are often made after public involvement activities. Because these changes are indicative to the public of the value of its input, the district can improve relationships with the public by informing it of project revisions.

19-6 RECORDS AND REPORTS

19-6.01 Public Comments

The district must record all comments received by the Department on a given highway improvement and enter these in the project file. Encourage all commentors to put their comments in writing and include their name and address. This relieves Department personnel from the responsibility of interpreting the meaning of the commentor's spoken word in recording their input. Consider providing a Comment Form that commentors may complete and return. Include on the form the date by which the form should be returned.

Not all comments must be recorded verbatim. There will not be a transcript of most informal involvement activities, and the district representatives therefore must ensure that all non-written comments are properly noted and recorded. The recording of comments may use small pocket tape recorders, or each representative may carry a note pad and record comments during his conversations with the public. Two-person teams may be formed — one to interact with the public and one to record comments. Take notes during the receipt of comments to ensure that none are overlooked. Attempt to obtain the name and address of those persons offering comments so that a response can be forwarded at a later time.

Record comments when they are received, whether or not they were received as a part of an involvement activity. For example, if an individual visits or calls the district office and comments on a project, record that comment and include it in the project files. All comments received should be addressed.

19-6.02 Transcripts

A transcript is required for all formal and open house public hearings. Transcripts may also be useful for other meetings and activities, especially if critical discussion or input is anticipated. This might include meetings with local government officials, organized opposition, or officials of agencies likely to be impacted by the project. These transcripts are easily recorded using one of the small compact tape recorders available. In this manner, important meetings can be recorded exactly and there is no summary or interpretation to be questioned.

Obtain transcripts by tape recorders or Certified Shorthand Reporters. To ensure coverage, some districts have used both tape recorders and shorthand reporters. If a tape recorder is used, a backup recorder should be available in case of malfunction. Operate both recorders with staggered starting times so that no input is lost while the tapes are being changed. If an activity is scheduled that may last an extensive period of time, it may be necessary to arrange for more than one Certified Shorthand Reporter so they may operate in alternating shifts to maintain alertness.

For open house public hearings, the transcript will consist of a copy of the handout, the attendance list, all written comments received, a written copy of the narrative from the general

information presentation, and a written copy of the verbal comments recorded by the official recorder.

19-6.03 Reports

All comments must eventually become a part of the project files and the Phase I report. If a transcript of a public involvement activity is available, it should be included in the Phase I report package and provided to FHWA with the environmental documents. It must be included for public hearings. If a transcript is not available, prepare a summary of the substantive comments that have been received from the public and include this in the report. In either case, the report should also contain a response to each of the comments included in the summary or the transcript. If a comment is addressed in the body of the report, it is not necessary to repeat that information under "Responses." Refer to the applicable page number of the report.

19-6.04 Responses

The district should acknowledge in writing all written comments received from the public, including individuals, private organizations, or government agencies. The acknowledgment should thank them for their input and provide a response to their questions or comments. If an answer will not be available for some time, acknowledge receipt of the comment with an indication that a final response will be forwarded at a later date. Verbal comments should also be acknowledged and responded to when the name and address of the commentor is available.

To reduce the workload of responding to comments after a scheduled public involvement activity, forward copies of the summary of comments and responses prepared for inclusion in the Phase I report, with a letter thanking them for their participation, to all who attended the activity. Separate responses need not be prepared. This summary of comments and responses could also be incorporated into a newsletter.

The district should acknowledge and respond to comments received from other governmental agencies. These responses are likely to eliminate the repetition of those comments in subsequent formal contacts such as through clearinghouse coordination or the circulation of environmental documents. Contacts with these agencies indicate that they repeat comments previously given because they have received no indication that their comments were received or addressed by the Department.